

## VLA Utilization Report December 2003

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AA293	Avruch, I.M. Pogrebenko, S.V. Campbell, R.M. Gurvits, L.I.	JIVE JIVE JIVE JIVE	Compact sources in the field of the Huygens-Titan Encounter	3.6,6 EXPLORE	23	1.5
AB1093	Blundell, K. Rawlings, S.	Oxford Oxford	High-z FRI quasars	20	18	11.0
AB1097	Bietenholz, M. Keohane, J.W. Chen, J. Massenburg, S.	York U. NASA-GSFC North Carolina Sci. North Carolina State	Expansion of 3C58 supernova remnant	20	29	4.5
AB1098	Branchesi, M. Gioia, I. Fanti, C. Fanti, R. Mullis, C.	Bologna Bologna Bologna Bologna ESO	Radio sources in X-ray selected clusters of galaxies	20	7	10.5
AB1102	Becker, R. Helfand, D. White, R.	Calif.-Davis Columbia STScI	Completing the FIRST survey	20	28	10.0
AC696	Clarke, T. Kempner, J.	Virginia Virginia	Radio halos in clusters of galaxies	20	8	4.0
AC699	Cohen, A. Feretti, L. Kassim, N. Orru, E. Lazio, J. Lane, W.	NRL Bologna NRL Bologna NRL NRL	Cluster halos and relics from 74-MHz survey	90	4	4.0
AC700	Cullen, H. Alexander, P.	Cambridge Cambridge	HI in interacting pair NGC 275	20 line	9, 18	10.5
AD485	Dolag, K. Govoni, F. Schindler, S. Feretti, L.	Padova Bologna Univ. Innsbruck Bologna	Magnetic fields in clusters of galaxies	6	21, 23, 27	16.0
AD487	Dahlem, M. Brogan, C. Breitschwerdt, D.	ATNF Univ. of Hawaii MPE	Spectral indices in the halo of NGC 891	90	8	6.5
AD488	Dallacasa, D. Stanghellini, C. Tinti, S.	Bologna Noto SISSA-Trieste	Sources whose spectra peak at high frequency	0.7, 1.3, 2, 3.6, 6, 20	6, 12	4.5
AD489	Doi, A. Inoue, M. Kameno, S. Wajima, K. Nagai, H.	NAOJ NAOJ NAOJ ISAS Tokyo Univ.	Spectral indices and variability of narrow-line Sy 1 galaxies	2, 3.6, 6, 20	5, 15, 23, 26	3.9
AD491	Demorest, P. Backer, D.	Calif., Berkeley Calif., Berkeley	Investigating a new population of X-sources	6, 20 w/AP466	19	4.0
AF407	Faber, S. Chapman, S.C. Davis, M. Iverson, R. Steidel, C. Reddy, N. Smail, I.	Calif.-Santa Cruz Caltech SETI ROE Caltech Caltech Durham	Deep 1.4 GHz imaging of DEEP extended Groth strip region	20	2, 14, 18, 24	24.5
AH820	Hyman, S. Lazio, J. Neureuther, J. Nord, M. Kassim, N.	Sweet Briar NRL Sweet Briar NRL NRL	Galactic center radio transient monitoring program	90	20, 29	3.0
AH821	Hardcastle, M.	Bristol	Physical conditions and emission mechanisms in 3C351 hotspots	0.7, 1.3	31	5.0
AH832	Hoare, M. Busfield, A. Lumsden, S. Oudmaijer, R.	Leeds Leeds Leeds Leeds	Completing the survey of red MSX sources	6	13	11.0
AI110	Iverson, R. Webb, T. Yee, H. Hoekstra, H. Gladders, M.	ROE Leiden Toronto Toronto Carnegie Obs.	Survey of a z=0.77 cluster with excess SCUBA sources	20	7, 19, 20	18.5
AJ304	Jimenez-Garate, M. Tomsick, J. Rupen, M. Dyer, K.	MIT Calif.-San Diego NRAO-Socorro NRAO-Socorro	Unusual ultraluminous X-ray source M81 X-9	3.6, 6	23	3.0

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AJ307	Jimenez-Serra, I. Martin-Pintado, J. DePree, C. Rodriguez-Franco, A.	CSIC OAN Agnes Scott College CSIC	Hot molecular condensation in Cepheus A HW2 region	0.7 line	12, 15, 26	12.0
AK550	Kulkarni, S.R. Berger, E. Soderberg, A.M. Chevalier, R.A.	Caltech Caltech Caltech Virginia	Type Ibc supernovae	1.3, 3.6, 6, 20	3, 6, 18, 29	7.5
AK573	Kulkarni, S. Berger, E. Frail, D.A. Soderberg, A.	Caltech Caltech NRAO-Socorro Caltech	Radio afterglows of GRBs	0.7, 1.3, 2, 3.6, 6, 20	2,4,5,7,8,12,15,17,21,23,26,28,31	17.6
AL602	Linz, H. Hofner, P. Araya, E. Stecklum, B. Henning, T. Kurtz, S. Rodriguez, L.F. Marti, J.	Tautenburg Puerto Rico Puerto Rico Thuringian Jena UNAM UNAM U. Jaen	Dust around the massive star at the center of HH80/81	0.7	21	4.0
AL603	Leipski, C. Huttemeister, S. Falcke, H.	Bochum Bochum MPIfR	Extended emission around radio-quiet quasars	3.6, 6	27, 27	16.0
AM766	Monnier, J.D. Greenhill, L.J. Tuthill, P.G. Danchi, W.C.	Michigan CfA Sydney U. NASA	Monitoring colliding wind binary WR112	3.6	14	1.5
AM777	Murgia, M. Parma, P. deRuiter, H. Mack, K-H. Fanti, R.	Bologna Bologna Bologna ASTRON Bologna	Spectral index imaging of fossil radio galaxies	3.6, 6, 20	8, 9	18.0
AO174	Olmi, L. Cesaroni, R. Hofner, P. Araya, E.	CNR Arcetri Puerto Rico Puerto Rico	Variability of new source near massive protostar IRAS20126+4104	1.3, 3.6, 6	8, 20	4.5
AO175	Owen, F. Morrison, G. Lonsdale, C. Smith, G. Xu, K.	NRAO-Socorro Caltech Caltech Calif.-San Diego Caltech	Observations of the SWIRE deep field	20	15, 21, 31	21.0
AP452	Perley, R.A. Condon, J.J. Cotton, W.D. Lane, W.M. Cohen, A.S. Kassim, N.E. Lazio, T.J.W. Erickson, W.C.	NRAO-Socorro NRAO-CV NRAO-CV NRL NRL NRL NRL Maryland	4 Meter all-sky survey (4MASS)	400	1, 4, 6,	44.0
AP463	Pisano, D.J. Guzman, R. Kobulnicky, C. Gallego, J. Bershady, M.	ATNF Florida Wyoming Complutense Wisconsin	HI and continuum observations of blue compact galaxies	20	11, 14	18.0
AP466	Perlman, R.S. Rector, T. Padovani, P. Landt, H. Stoeke, J.	Maryland Alaska STScI STScI Colorado	Positions of X-ray loud quasars for VLBA observations	6 EXPLORE	20	1.5
AR523	Rupen, M. Dhawan, V. Mioduszewski, A.J. Ribo, M.	NRAO-Socorro NRAO-Socorro NRAO-Socorro Barcelona	X-ray binaries, transients and related sources	0.7, 1.3, 2, 3.6, 6, 20	4,15,20,26,27	10.0
AR529	Rudnick, L. Rottgering, H. Wilman, R. Rawlings, S. Brand, K. Blundell, K. Delain, K.	Minnesota Leiden Leiden Oxford Oxford Oxford Minnesota	Search for diffuse structures in clusters of galaxies	90	12	11.0
AS762	Sokoloski, J.L. Mioduszewski, A. Brocksopp, C. Rupen, M.	CfA NRAO-Socorro MSSL NRAO-Socorro	Monitoring symbiotic binaries during outburst	3.6, 6, 20	27	1.0

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AS772	Sandell, G. Plambeck, R.	NASA Calif.-Berkeley	Spectral index imaging of Herbig Be star MWC297	2, 6	5	4.5
AS780	Schinnerer, E. Rupen, M. Kennicutt, R.	NRAO-Socorro NRAO-Socorro Arizona	Spectral-index study of M51 on 100-pc scale	6, 20 w/BC138	11, 12, 20, 28	30.5
AS781	Sarma, A. Troland, T.H. Crutcher, R.M.	Eastern Kentucky Kentucky Illinois	OH Zeeman observations of S88B	20 line	1	7.0
AS784	Swaters, R. Verheijen, M. Bershady, M. Andersen, D.	Johns Hopkins Wisconsin Wisconsin MPIA	Kinematics of low surface brightness galaxy DDO 39	20 line	23, 28	20.1
AT294	Tsujimoto, M. Feigelson, E. Saito, M.	Penn State Penn State CfA	Observations of two protostars in Orion with X-ray emission	3.6	9	1.5
AT295	Terashima, Y. Ho, L.C. Ulvestad, J.S.	ISAS Carnegie Obs. NRAO-Socorro	Three ultra-low luminosity AGNs with X-ray emission	2, 3.6, 6, 20	5	4.0
AU096	Ulvestad, J.S. Mathur, S. Fields, D.	NRAO-Socorro Ohio State Ohio State	Narrow-line Seyfert 1 galaxies selected from SDSS	3.6	12, 28	3.0
AW589	Wilcots, E.M. Westfall, K. Prescott, M.	Wisconsin Wisconsin Wisconsin	High resolution HI study of NGC 2537	20	5, 13	16.0
AW599	Whysong, D. Antonucci, R. Geller, R.	Calif.-Santa Barbara Calif.-Santa Barbara Calif.-Santa Barbara	Search for Thompson scattering in the intergalactic medium	20	26	8.0
AW605	Walter, F. Brinks, E. de Blok, E. Thornley, M. Kennicutt, R.	NRAO-Socorro Guanajuato Univ. Cardiff Bucknell U. Arizona	HI structures of nearby galaxies	20 line	2, 9, 15, 21, 29	38.0
AW607	Winn, J. Rusin, D. Kochanek, C. Lovell, J. Fassnacht, C. Koopmans, L.	CfA CfA CfA ATNF Calif.-Davis Caltech	Gravitational lens monitoring	3.6	1,4,8,11,14, 15,18,21,24, 27,29,31	12.0
AW608	Weiler, K.W. Stockdale, C. Sramek, R. Van Dyk, S.D. Panagia, N. Marcaide, J.M. Lewin, W.H.G. Pooley, D. Immler, S.	NRL NRL NRAO-Socorro IPAC STSci Valencia MIT MIT Massachusetts	ToO observations of supernovae	1.3, 2, 3.6, 6, 20, 90	20, 24	3.5
AW620	Walter, F. Carilli, C. Lo, F. Menten, K. Cox, P. Fan, X. Omont, A. Strauss, M.	NRAO-Socorro NRAO-Socorro NRAO-CV MPIfr IAP-Paris Arizona IAP-Paris Princeton	Resolving CO disk in J1148+5251 at z=6.42	0.7 line	4, 29	12.0
AY146	Yun, M. Scoville, N.	Massachusetts Caltech	Hydrogen recombination line in starburst+AGN systems	3.6 line	17	9.0
AZ143	Zhao, J.-H. Herrnstein, R.M. Goss, M. Bower, G. Pegg, J.	CfA CfA NRAO-Socorro Calif.-Berkeley CfA	Monitoring quasi-periodic oscillations of SgrA*	0.7, 1.3, 2	20	2.0
AZ147	Zapata, L. Rodriguez, L.F. Kurtz, S. O'Dell, C.R.	UNAM UNAM UNAM Vanderbilt	Search for exciting source(s) of OMC-1S outflows	1.3	22, 26	8.1
BC138	Cheung, T. Taylor, G. Wardle, J.	Brandeis NRAO-Socorro Brandeis	Three lobe-dominated quasars with radio/optical hotspots	90 Single antenna VLBI w/pointing, AS780	10	9.9
BK103	Kemball, A.	Illinois	Colocation of masers arising from different SiO transitions	0.7 line	19	2.5

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
S50252	Kaaret, P. Corbel, S. Rupen, M.	Columbia CEA-Saclay NRAO-Socorro	Chandra/VLA monitoring of ULX source in NGC 5408	6	20	4.0
	Staff	NRAO	Baselines, Pointing, Delays			46.8
			Christmas			37.0
			Maintenance			56.3
			Move/Operations			7.2
			Shutdown			4.0
			Software			30.9
			General tests			34.5

The average downtime was 8.6%.

The array was scheduled for 95.0% (709.0 hours)  
 529.4 hours (71.0% of time) for astronomical programs  
 92.5 hours (12.4% of time) for tests/calibration  
 87.1 hours (11.6% of time) for maintenance  
 Total 709.0 hours (100.0%) scheduled.

Array was in the B configuration from December 1 through December 31

The following independent proposals shared simultaneous observing time Projects Hours

AS780/BC138 6.4

Pointing/BC138 3.5

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AB1098	Branchesi, M. Gioia, I. Fanti, C. Fanti, R. Mullis, C.	Bologna Bologna Bologna Bologna ESO	Radio sources in X-ray selected clusters of galaxies	20	30	10.0
AB1101	Beuther, H. Sridharan, T.K. Keto, E.	CfA CfA CfA	Spectral indices of hypercompact HII regions	1.3, 2	8	5.0
AC681	Cannon, J.M. Skillman, E.D.	Minnesota Minnesota	Continuum emission in the low-metallicity galaxy I Zw 18	3.6, 20	3	1.4
AC689	Cheung, T. Wardle, J.F.C. Sambruna, R.M. Gambill, J.K. Urry, C.M. Maraschi, L. Tavecchio, F.	Brandeis Brandeis George Mason George Mason Yale Univ. Brera Brera	Deep search for inner X-ray jet in PKS1136-135	3.6	8	8.5
AC698	Clancy, R.T. Butler, B. Gurwell, M. Muhleman, D.	Space Science Inst NRAO-Socorro CfA Caltech	Martian atmospheric water vapor during 2003 opposition	1.3 line	1	0.1
AC725	Claussen, M. Healy, K. Straughn, A. Starrfield, S. Bond, H.	NRAO-Socorro Arizona State Arizona State Arizona State STScI	Masers in V838 Monocerotis	0.7, 1.3, 20 line EXPLORE	4	2.0
AC727	Claussen, M. Marvel, K. Wilking, B. Wootten, H.A.	NRAO-Socorro AAS UMSL NRAO-CV	VLA Confirmation of High velocity water masers in a maser outburst of the young stellar object IRAS 16293-2422	1.3	10	1.0
AF406	Feretti, L. Orru, E. Giovannini, G. Lane, W. Kassim, N. Perley, R.	Bologna Bologna Bologna NRL NRL NRAO-Socorro	Spectral indices of giant radio galaxies 3C35 and 3C326	90, 400	2, 23	21.0
AF408	Frey, S. Mosoni, L. Gurvits, L. Paragi, Z.	FOMISGO FOMISGO JIVE JIVE	Spectral index of J0836+0054 at z=5.8	3.6, 6, 20 EXPLORE	5	1.5
AG653	Gawronski, M. Marecki, A. Kus, A. Kunert, M.	Torun Torun Torun Torun	Radio sources with hybrid FRI/FRII morphologies	6	11	3.0
AH820	Hyman, S. Lazio, J. Neureuther, J. Nord, M. Kassim, N.	Sweet Briar NRL Sweet Briar NRL NRL	Galactic center radio transient monitoring program	90	23	1.0
AH822	Harris, D.E. Biretta, J.A. Junor, W.	CfA STScI Los Alamos	Inner jet of M87: tests of a synchrotron model	0.7, 1.3, 2	16	8.0
AH832	Hoare, M. Busfield, A. Lumsden, S. Oudmaier, R.	Leeds Leeds Leeds Leeds	Completing the survey of red MSX sources	6	26	11.5
AJ298	Johnson, K. Seth, A.	Wisconsin Washington	Massive star formation in Magellanic irregular NGC6822	2	13,14	13.6
AK550	Kulkarni, S.R. Berger, E. Soderberg, A.M. Chevalier, R.A.	Caltech Caltech Caltech Virginia	Type Ibc supernovae	1.3, 3.6, 6, 20	4, 14, 25	5.6
AK573	Kulkarni, S. Berger, E. Frail, D.A. Soderberg, A.	Caltech Caltech NRAO-Socorro Caltech	Radio afterglows of GRBs	1,3,9,20	1, 9, 20	10.3
AL560	Lazio, J. Fabian, A. Kassim, N. Perley, R.	NRL Cambridge NRL NRAO-Socorro	Old radio lobes in the intracluster medium of the Perseus cluster	400	21	10.0
AL597	Laing, R.A. Bridle, A.H. Parma, P.	Oxford NRAO-CV Bologna	Spectrum of 3C31 from 74 to 8400 MHz	90, 400	7	12.0

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AL604	Laing, R. Parma, P. Bridle, A.H. Fanti, R.	Oxford Bologna NRAO-CV Bologna	Depolarization asymmetry in extragalactic radio sources	6, 20	15, 16, 29	24.0
AL606	Lim, J. Takakuwa, S. Choi, M.	Academia Sinica CfA Academia Sinica	Imaging binary low-mass protostellar system L1551 IRS5	0.7	5	6.0
AM766	Monnier, J.D. Greenhill, L.J. Tuthill, P.G. Danchi, W.C.	Michigan CfA Sydney U. NASA	Monitoring colliding wind binary WR112	3.6	10	1.0
AO170	O'Dea, C. Guerra, E. Daly, R. Donahue, M.	STScI Rowan Penn State STScI	Propagation of powerful radio galaxies	6, 20	29	6.0
AP452	Perley, R.A. Condon, J.J. Cotton, W.D. Lane, W.M. Cohen, A.S. Kassim, N.E. Lazio, T.J.W. Erickson, W.C.	NRAO-Socorro NRAO-CV NRAO-CV NRL NRL NRL NRL Maryland	4 Meter all-sky survey (4MASS)	400	2,4,6-8,10,11,13,15,17,20-22,24,28-30	175.6
AP461	Pedlar, A. Muxlow, T. Beswick, R. Wills, K.	Manchester Manchester Manchester Sheffield	Monitoring radio SNE and SNRs in nearby starbursts	2, 3.6, 6	14, 14	8.5
AP462	Paladino, R. Murgia, M. Helfer, T. Ekers, R. Blitz, L. Moscadelli, L. Wong, T. Gregorini, L.	Cagliari Bologna Calif.-Berkeley ATNF Calif.-Berkeley Cagliari Calif.-Berkeley Bologna	Radio continuum in BIMA SONG galaxies	20	3, 4, 6, 10	30.5
AR523	Rupen, M. Dhawan, V. Mioduszewski, A.J. Ribo, M.	NRAO-Socorro NRAO-Socorro NRAO-Socorro Barcelona	X-ray binaries, transients and related sources	0.7, 1.3, 2, 3.6, 6, 20	2,4,6,9-11,15,18,21,24	13.2
AR530	Reipurth, B. Rodriguez, L.F. Bally, J.	Hawaii UNAM Colorado	Search for radio cluster in W40	3.6	3	6.0
AR531	Rothberg, B. Chambers, K. Joseph, R.	Hawaii Hawaii Hawaii	Radio emission associated with galaxy mergers	3.6, 20	1, 2	6.5
AR535	Ribo, M. Mirabel, I.F. Rodriguez, J. Hannikainen, D.	Barcelona Saclay Switzerland Helsinki	VLA/INTEGRAL/RXTE monitoring of GRS1915+105	3.6, 20	1,2	8.0
AS762	Sokoloski, J.L. Mioduszewski, A. Brocksopp, C. Rupen, M.	CfA NRAO-Socorro MSSL NRAO-Socorro	Monitoring symbiotic binaries during outburst	3.6, 6, 20	11	1.5
AS778	Stockdale, C. Maddox, L. Cowan, J. Pannuti, T. Prestwich, A. Kilgard, R.	NRL Oklahoma Oklahoma MIT CfA CfA	Spectral-index study of nearby spiral galaxies	6	23, 28	16.0
AS781	Sarma, A. Troland, T.H. Crutcher, R.M.	Kentucky Kentucky Illinois	OH Zeeman observations of S88B	20 line	28	7.0
AS782	Sewilo, M. Churchwell, E. Goss, M. Kurtz, S. Hofner, P.	Wisconsin Wisconsin NRAO-Socorro UNAM Puerto Rico	Broad radio recombination lines from hypercompact HII regions	0.7 line	13,16	12.0
AS784	Waters, R. Verheijen, M. Bershady, M. Andersen, D.	Johns Hopkins Wisconsin Wisconsin MPIA	Kinematics of low surface brightness galaxy DDO 39	20 line	25	10.0
AT295	Terashima, Y. Ho, L.C. Ulvestad, J.S.	ISAS Carnegie Obs. NRAO-Socorro	Three ultra-low luminosity AGNs with X-ray emission	2, 3.6, 6, 20	3	4.5

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AW605	Walter, F. Brinks, E. de Blok, E. Thornley, M. Kennicutt, R.	NRAO-Socorro Guanajuato Univ. Cardif Bucknell U. Arizona	HI structures of nearby galaxies	20 line	9	7.5
AW607	Winn, J. Rusin, D. Kochanek, C. Lovell, J. Fassnacht, C. Koopmans, L.	Cfa Cfa Cfa ATNF Calif.-Davis Caltech	Gravitational lens monitoring	3.6	1,4,8,10,11, 13,15,20,23, 24,28,29	14.0
AW608	Weiler, K.W. Stockdale, C. Sramek, R. Van Dyk, S.D. Panagia, N. Marcaide, J.M. Lewin, W.H.G. Pooley, D. Immler, S.	NRL NRL NRAO-Socorro IPAC STScI Valencia MIT MIT Massachusetts	ToO observations of supernovae	1.3, 2, 3.6, 6, 20, 90	20	9.0
AW618	Wilcots, E.M. Prescott, M.	Wisconsin Wisconsin	Dynamics of Magellanic spirals NGC 4618 & NGC 3664	20 line	17, 20	18.5
AW619	Wilcots, E.M. Sanders, W. Doane, N.	Wisconsin Wisconsin Wisconsin	Continuum and HI imaging of NGC 4395	20	22, 24	18.0
AZ143	Zhao, J.-H. Herrnstein, R.M. Goss, M. Bower, G. Pegg, J.	Cfa Cfa NRAO-Socorro Calif.-Berkeley Cfa	Monitoring quasi-periodic oscillations of SgrA*	0.7, 1.3, 2	10	2.0
BG141	Greenhill, L.J. Braatz, J.A.	Cfa NRAO-GB	Water maser emission in nucleus of NGC1386	1.3 line Phased array VLBI	1	6.5
GD017	Diamond, P.J. Lonsdale, C.J. Lonsdale, C.J. Smith, H.E.	Manchester Haystack Caltech Caltech	Monitoring evolution of compact emission of Arp 220	6, 20 Phased array VLBI	9	12.3
GT005	Taylor, G.	NRAO-Socorro	Late time observations of GRB 030329	3.6 ToO Phased array VLBI	1	7.0
	Staff	NRAO	Baselines, Pointing, Delays Maintenance Polarization Calibrator Monitoring Thanksgiving shutdown Software Students General tests		11	43.8 45.2 12.5 26.6 28.5 1.5 31.0

The average downtime was 10.7%.

The array was scheduled for 96.3% (695.4 hours)  
 545.4 hours (75.5% of time) for astronomical programs  
 76.3 hours (10.6% of time) for tests/calibration  
 73.7 hours (10.2% of time) for maintenance  
 Total 746.1 hours (100.0%) scheduled.

Array was in the B configuration from November 1 through November 30

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AA267	Alexander, P. Riley, J. Pooley, G.G. Fabian, A.C. Hardcastle, M. Worrall, D. Cotter, G. Inskip, K. Allen, S. Crawford, C.	Cambridge MRAO Cambridge Cambridge Bristol Bristol Cambridge Cambridge Cambridge Cambridge	Formation of cold clouds by FR II radio sources	2, 3.6, 6, 20 w/BN25	23, 25	16.0
AB1100	Best, P.	Edinburgh	SCUBA sources in z=0.9 cluster CL1604+4304	20	24	10.0
AB1102	Becker, R. Helfand, D. White, R.	Calif.-Davis Columbia STScI	Completing the FIRST survey	20	20, 26, 26	15.5
AB1103	Bennert, N. Falcke, H. Schulz, H.	Ruhr-Univ. Bochum MPIfR Univ. Catolica Norte	Helical jets in Seyfert-2 galaxy ES0428-G14	2, 3.6	2, 5, 11, 13	13.0
AB1105	Bower, G.C. Plambeck, R. Bolatto, A.	Calif.-Berkeley Calif.-Berkeley Calif.-Berkeley	Calibrators for astrometry of radio stars in the Orion nebula	1.3, 3.6	23	1.0
AC696	Clarke, T. Kempner, J.	Virginia Virginia	Radio halos in clusters of galaxies	20	2, 7	9.0
AC697	Cirasuolo, M. Magliocchetti, M. Celotti, A. Danese, L. Cristiani, S.	SISSA-Trieste SISSA-Trieste SISSA-Trieste SISSA-Trieste Padova	Highest-redshift complete quasar sample	20	1	8.0
AC698	Clancy, R.T. Butler, B. Gurwell, M. Muhleman, D.	STScI NRAO-Socorro CfA Caltech	Martian atmospheric water vapor during 2003 opposition	1.3 line	1, 20, 31	18.1
AC702	Cannon, J.M. Skillman, E.D.	Minnesota Minnesota	Continuum emission in dwarf starburst galaxies: NGC 625	3.6, 6, 20	8, 9, 10	13.1
AD485	Dolag, K. Govoni, F. Schindler, S. Ferettil, L.	Padova Bologna Univ. Innsbruck Bologna	Magnetic fields in clusters of galaxies	6	7	6.0
AD486	DePree, C. Wilner, D. Goss, M. Deblasio, J.	Agnes Scott College CfA NRAO-Socorro Agnes Scott College	H52 alpha in hypercompact H II regions in Sgr B2 Main	0.7	4	8.0
AD490	Dyer, K. Owen, F.	NRAO-Socorro NRAO-Socorro	Spectral indices of Abell 13 at low frequencies	90, 400	4	3.5
AF405	Feretti, L. Orru, E. Brunetti, G. Giovannini, G. Girardi, M. Govoni, F.	Bologna Bologna Bologna Bologna Trieste Bologna	Spectral indices of radio halos in clusters A2219 and A2744	90	3, 6, 18	16.5
AG654	Garland, C. Pisano, D.J. Williams, J. Guzman, R. Castander, F.	Hawaii ATNF Hawaii Florida Catalunya	HI mapping of three luminous compact blue galaxies	20 line w/BN25	19, 20, 25, 27	16.0
AH776	Harris, D.E. Krawczynski, H. Kassim, N. Katz-Stone, D. Lane, W.	CfA Yale Univ. NRL USNA NRL	Jet/intracluster medium interactions of the radio galaxy 3C 129	400	20	4.0
AH820	Hyman, S. Lazio, J. Neureuther, J. Nord, M. Kassim, N.	Sweet Briar NRL Sweet Briar NRL NRL	Galactic center radio transient monitoring program	90	13, 23	3.0
AH835	Hachisuka, K. Horiuchi, S. Mochizuki, N. Umemoto, T. Miyoshi, M.	NAOJ JPL NAOJ NAOJ NAOJ	Survey of water masers in the outer Galaxy	1.3 line	13	5.0
A1111	Impey, C. Miller, L. Lopes, A.	Arizona Oxford Oxford	Potential new wide-separation gravitational lenses	3.6	4, 7, 9, 10, 14	27.5
AJ298	Johnson, K. Seth, A.	Wisconsin Washington	Massive star formation in Magellanic irregular NGC6822	2	26	6.5



## VLA Utilization Report October 2003

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AJ299	Johnson, K. Plante, S.	Wisconsin Laval	Star cluster formation at low metallicities: SBS0335-052	1.3, 2	28	7.0
AJ304	Jimenez-Garate, M. Tomsick, J. Rupen, M. Dyer, K.	MIT Calif.-San Diego NRAO-Socorro NRAO-Socorro	Unusual ultraluminous X-ray source M81 X-9	3.6, 6	18	2.9
AJ306	Juvela, M. Vaisanen, P. Mattila, K. Harju, J. Dahlem, M.	Helsinki ESO Helsinki Helsinki CSIRO	Radio counterparts to sources detected in ISOPHOT CIRB program	20	9, 18	8.0
AK550	Kulkarni, S.R. Berger, E. Soderberg, A.M. Chevalier, R.A.	Caltech Caltech Caltech Virginia	Type Ibc supernovae	1.3, 3.6, 6, 20	6, 7, 11, 21, 27	9.3
AK571	Kording, E. Colbert, E. Falcke, H.	MPIfR Johns Hopkins MPIfR	Radio loud IXOs	3.6	3, 7, 16, 18	9.0
AK573	Kulkarni, S. Berger, E. Frail, D.A. Soderberg, A.	Caltech Caltech NRAO-Socorro Caltech	Radio afterglows of GRBs	0.7, 1.3, 2, 3.6, 6, 20	6,8,15,30	7.3
AL606	Lim, J. Takakuwa, S. Choi, M.	Academia Sinica CfA Academia Sinica	Imaging binary low-mass protostellar system L1551 IRS5	0.7	26	6.0
AM763	Martin, S.C. dePater, I. Gibbard, S.	Caltech Calif.-Berkeley LLNL	Lower tropospheric motions in Neptune	0.7, 1.3	11, 12	16.0
AM766	Monnier, J.D. Greenhill, L.J. Tuthill, P.G. Danchi, W.C.	Michigan CfA Sydney U. NASA	Monitoring colliding wind binary WR112	3.6	16	1.5
AM778	Montero-Castano, M. Herrnstein, R. Ho, P.T.P.	CfA CfA CfA	Ammonia absorption against Sgr A*	1.3 line	3, 6	12.0
AM783	Mason, P. Gray, C.	U. Texas-El Paso U. Texas-El Paso	Survey of magnetic cataclysmic variable stars	3.6	16, 17	6.0
AP452	Perley, R.A. Condon, J.J. Cotton, W.D. Lane, W.M. Cohen, A.S. Kassim, N.E. Lazio, T.J.W. Erickson, W.C.	NRAO-Socorro NRAO-CV NRAO-CV NRL NRL NRL NRL Maryland	4 Meter sky survey	400 w/BN25	2,5,18,19,24 ,25,27,30,31	95.9
AR518	Rawlings, S. Brand, K. Hill, G. Tufts, J.	Oxford Oxford Texas Texas	Jet alignments in forming super-structures	3.5	23	2.3
AR523	Rupen, M. Dhawan, V. Mioduszewski, A.J. Ribo, M.	NRAO-Socorro NRAO-Socorro NRAO-Socorro Barcelona	X-ray binaries, transients and related sources	0.7, 1.3, 2, 3.6, 6, 20	2, 8, 12, 20, 21, 27	10.5
AS762	Sokoloski, J.L. Mioduszewski, A. Brocksopp, C. Rupen, M.	CfA NRAO-Socorro MSSL NRAO-Socorro	Monitoring symbiotic binaries during outburst	3.6, 6, 20	6,29	3.6
AS774	Snellen, I. Best, P. Rigby, E.	Edinburgh Edinburgh Edinburgh	Search for distant FRI radio galaxies	20	30	2.5
AS776	Sandell, G. Wright, M. Goss, M.	NASA Calif.-Berkeley NRAO-Socorro	Continuum and H2O study of massive protostar NGC7538S and vicinity	1.3, 3.6	14	2.0
AS777	Schinnerer, E. Goss, M. Turner, J. Johnson, K.	NRAO-Socorro NRAO-Socorro Calif.-Los Angeles Wisconsin	Star formation in central 300 pc of IC 342	3.6, 6	1, 8	7.0
AS779	Stockdale, C. VanDyk, S. Weiler, K. Rupen, M. Sramek, R. Panagia, N. Paczynski, B.	NRL Caltech NRL NRAO-Socorro NRAO-Socorro STScI Princeton	Late-time radio emission from Type Ib/c supernovae	3.6	14,16,17	29.5

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AS785	Sollins, P. Ho, P.T.P. Zhang, Q. Keto, E.	CfA CfA CfA CfA	Ammonia absorption across ultracompact HII regions	1.3 line	9, 10	17.0
AU096	Uivestad, J.S. Mathur, S. Fields, D.	NRAO-Socorro Ohio State Ohio State	Narrow-line Seyfert 1 galaxies selected from SDSS	3.6	22	6.0
AW605	Walter, F. Brinks, E. de Blok, E. Thornley, M. Kennicutt, R.	NRAO-Socorro Guanajuato Univ. Cardif Bucknell U. Arizona	HI structures of nearby galaxies	20 line	3, 19, 29	23.0
AW607	Winn, J. Rusin, D. Kochanek, C. Lovell, J. Fassnacht, C. Koopmans, L.	CfA CfA CfA ATNF Calif.-Davis Caltech	Gravitational lens monitoring	3.6	2,5,7,11,14, 16,19,23,27, 30	13.1
AW608	Weiler, K.W. Stockdale, C. Sramek, R. Van Dyk, S.D. Panagia, N. Marcaide, J.M. Lewin, W.H.G. Pooley, D. Immler, S.	NRL NRL NRAO-Socorro IPAC STScI Valencia MIT MIT Massachusetts	ToO observations of supernovae	1.3, 2, 3.6, 6, 20, 90	7, 15, 21, 23	5.5
AW615	Willner, S. Goss, M. Coil, A. Barbby, P. Huang, J. Wang, Z.	CfA NRAO-Socorro Calif.-Berkeley CfA CfA CfA	High-z galaxies in extended Groth strip	6	11, 12, 13	21.0
AZ143	Zhao, J.-H. Herrnstein, R.M. Goss, M. Bower, G. Pegg, J.	CfA CfA NRAO-Socorro Calif.-Berkeley CfA	Monitoring quasi-periodic oscillations of SgrA*	0.7, 1.3, 2	14	2.0
AZ147	Zapata, L. Rodriguez, L.F. Kurtz, S. O'Dell, C.R.	UNAM UNAM UNAM Vanderbilt	Search for exciting source(s) of OMC-1S outflows	1.3	4	5.0
BN025	Nagai, H. Asada, K. Inoue, M.	Tokyo Univ. NAOJ NAOJ	Spectral indices in CSO CTD93	2, 3.6, 6, 20 Single antenna VLB	25	10.9
GG049	Gudel, M. Smith, K. Conway, J. Pestalozzi, M. Beasley, A.J. Skinner, S. Audard, M.	Paul Scherrer MPIfR Onsala Onsala OVRO Colorado Columbia	Radio and x-ray observations of the T Tauri NS Triple System	3.6, 6 Phased array VLBI	23	10.8
GM048	Marcaide, J.M. Guirado, J.C. Alberdi, A. Lara, L. Ros, E. Diamond, P.J. Shapiro, I.I. Preston, R.A. Schilizzi, R.T. Mantovani, F. Perez-Torres, M.A. Trigilio, G. Van Dyk, S. Weiler, K.W. Sramek, R.A. Whitney, A.R.	Valencia Valencia IAA Granada MPIfR Jodrell Bank CfA JPL JIVE Bologna IAA Noto IPAC NRL NRAO-Socorro Haystack	Monitoring the expansion of SN 1993J at 6 and 18cm	6, 20 Phased array VLBI	29	10.9

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
	Staff	NRAO	Baselines, Pointing, Delays			45.6
			Maintenance			55.1
			Move/Operations			10.0
			Polarization Calibrator Monitoring			11.0
			Software			29.9
			General tests			42.9

The average downtime was 8.3%.

The array was scheduled for 100% (746.1 hours)  
 562.4 hours (75.4% of time) for astronomical programs  
 98.6 hours (13.2% of time) for tests/calibration  
 85.1 hours (11.4% of time) for maintenance  
 Total 746.1 hours (100.0%) scheduled.

Array was in the BnA configuration from October 1 through October 14

Array was in the B configuration from October 14 through October 31

The following independent proposals shared simultaneous observing time  
 (11.0 hours total simultaneous observing):

Projects	Hours
AA267/BN25	9.0
AG654/BN25	1.0
AP452/BN25	1.0

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Progn	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AA278	Anderson, J.M. Ulvestad, J.S.	NMIMT NRAO-Socorro	Estimating LLAGN sizes using intraday variability	3.6	12-14, 16,18,21,25	50.5
AA289	Araya, E.	Univ. Puerto Rico	Formaldehyde maser in IRAS 18566+0408	6 line	5	1.5
AB1090	Braatz, J. Greenhill, L. Moran, J.	NRAO-GB CfA CfA	Continuum and maser-line emission in nearby AGNs	1.3	2	2.0
AB1096	Butler, B. Slade, M. Haldemann, A. Muhleman, D.	NRAO-Socorro JPL Caltech Caltech	Goldstone/VLA radar observations of Mars	3.6 line	7	8.5
AB1099	Brookes, M. Best, P. Rottgering, H. Peacock, J. Dunlop, J.	Edinburgh Edinburgh Leiden Edinburgh Edinburgh	Spectral indices of sources from EIS-NVSS survey	90	30	6.0
AB1107	Bock, D. Pavlov, G. Kargaltsev, O. Sanwal, D. Teter, M.A. Dodson, R.	Calif.-Berkeley Penn State Penn State Penn State Penn State ISAS	Radio emission from inner Vela pulsar wind nebula	6 HTRP	22, 26, 27, 28	16.0
AC628	Castelletti, G. Kassim, N. Dubner, G.	IAFE NRL IAFE	Supernova remnant W44 at low frequency	90, 400	1	2.5
AC675	Curiel, S. Rodriguez, L.F. Trinidad, M.A. Loinard, L. Torrelles, J.M. Canto, J. D'Alessio, P. Raja, A.	UNAM UNAM UNAM UNAM IEEC-Barcelona UNAM UNAM UNAM	Orbital motions in L1551 IRS5 binary system	0.7, 2	5	6.5
AC684	Chapman, S.C. Iverson, R. Steidel, C.C. Baugh, C.	Caltech ROE Caltech Durham	Deep 1.4-GHz imaging of luminous z <sup>~3</sup> protocluster field	20	4, 6	12.0
AC686	Chambers, K.C. McGrath, E.	IoA IoA	High redshift cutoff of the mJy radio source population	3.6, 90	2	12.0
AC687	Cotton, W.D. Fanti, C. Fanti, R. Bicknell, G. Spencer, R.	NRAO-CV Bologna Bologna ANU Jodrell Bank	Faraday rotation and depolarization in the CSS quasar 3C277.1	1.3, 2, 3.6 w/Pie Town	7	12.0
AC689	Cheung, T. Wardle, J.F.C. Sambruna, R.M. Gambill, J.K. Urry, C.M. Maraschi, L. Tavecchio, F.	Brandeis Brandeis George Mason George Mason Yale Univ. Brera Brera	Deep search for inner X-ray jet in PKS1136-135	3.6	8	2.5
AC698	Clancy, R.T. Butler, B. Gurwell, M. Muhleman, D.	Space Science Inst NRAO-Socorro CfA Caltech	Martian atmospheric water vapor during 2003 opposition	1.3 line	21, 30	12.9
AC704	Carilli, C. Walter, F.	NRAO-Socorro NRAO-Socorro	Continuum from z=6.4 QSO	20	19	10.0
AD488	Dallacasa, D. Stanghellini, C. Tinti, S.	Bologna Noto SISSA-Trieste	Sources whose spectra peak at high frequency	0.7, 1.3, 2, 3.6, 6, 20	12, 13, 14, 15, 15, 15	22.0
AD492	Dyer, K. Hunt, L.	NRAO-Socorro Arcetri	SBS0335-052 at 20cm	20	12	1.0
AF399	Fey, A. Boboltz, D. Johnston, K. Claussen, M. Gaume, R.	USNO USNO USNO NRAO-Socorro USNO	Radio star observations for a radio/optical frame tie	3.6 w/Pie Town	9	24.0
AG637	Garay, G. Brooks, K.J. Rodriguez, L.F.	Chile ESO UNAM	Collimated jet associated with an O-type protostar	2, 3.6	25, 30	4.0
AG646	Gaensler, B. Stappers, B.	CfA Amsterdam	Proper motion studies of young pulsars in SNRs	20 w/Pie Town w/BH111	1	4.0
AH825	Hofstadter, M. Butler, B.	JPL NRAO-Socorro	Seasonal variations and depth probing of the Uranus atmosphere	2, 6, 20	1	6.0

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AH832	Hoare, M. Busfield, A. Lumsden, S. Oudmaijer, R.	Leeds Leeds Leeds Leeds	Completing the survey of red MSX sources	6	22	4.5
AH835	Hachisuka, K. Horiuchi, S. Mochizuki, N. Umamoto, T. Miyoshi, M.	NAOJ JPL NAOJ NAOJ NAOJ	Survey of water masers in the outer Galaxy	1.3 line	29	7.0
AI108	Iyison, R.J. Dunlop, J.S.	ROE ROE	Deep imaging of the SHADES survey: the SCUBA population	20	1, 4	10.5
AK509	Kulkarni, S.K. Frail, D. Galama, T.J. Bloom, J.S. Berger, E. Harrison, F.A.	Caltech NRAO-Socorro Caltech Caltech Caltech Caltech	Radio afterglows from gamma ray bursts	...	11, 14, 18, 22, 27	10.0
AK550	Kulkarni, S.R. Berger, E. Soderberg, A.M. Chevalier, R.A.	Caltech Caltech Caltech Virginia	Type Ibc supernovae	1.3, 3.6, 6, 20	11, 15, 23, 28	7.5
AK560	Keto, E.	CfA	Continuing accretion in massive star formation	1.3 line	29	8.5
AK571	Kording, E. Colbert, E. Falcke, H.	MPIfR Johns Hopkins MPIfR	Radio loud IXOs	3.6	7, 15, 15	6.0
AK574	Kondratko, P. Greenhill, L. Moran, J. Lovell, J. Jauncey, D. Kuiper, T.	Harvard CfA CfA ATNF ATNF JPL	Southern AGN with water masers	1.3, 3.6, 6 line	24-27	7.0
AL591	Lazio, J. Dietrick, J. Greenlees, E. Hogan, E. Jone, C. Hennig, L.A. Farrell, W. Desch, M.	NRL Thomas Jefferson Thomas Jefferson Thomas Jefferson Thomas Jefferson NASA NASA	Search for coherent cyclotron emission from extrasolar planets	400	11	10.0
AL595	Lacy, M. Laurent-Muehleisen, Becker, B.	Calif.-Davis Calif.-Davis Calif.-Davis	Radio-intermediate quasars from FIRST bright quasar survey	20	5, 5	4.0
AL609	Lang, C. Johnson, K. Goss, M. Rodriguez, L.F.	Univ. Iowa Wisconsin NRAO-Socorro UNAM	Stellar wind sources in Galactic center clusters	1.3, 3.6	27, 28	16.0
AM766	Monnier, J.D. Greenhill, L.J. Ribo, M. Tuthill, P.G. Danchi, W.C.	Michigan CfA Barcelona Sydney U. NASA	Monitoring colliding wind binary WR112	3.6	18	1.5
AM780	Moscadelli, L. Furuya, R. Claussen, M. Kitamura, Y. Testi, L. Wootten, H.A.	Cagliari Arcetri NRAO-Socorro ISAS Arcetri NRAO-CV	Selecting YSOs for water masers proper motion studies	1.3 line	15, 16	5.0
AN107	Neff, S. Ulvestad, J.S.	NASA NRAO-Socorro	High resolution imaging of the young merger NGC 3395/6	3.6, 6 w/BH111	1	10.0
AN112	Neff, S. Rots, A. Fabbiano, G. Zezas, A.	NASA CfA CfA CfA	Radio continuum in the Antennae merger system	20	6, 29	11.0
AP439	Perlman, E.S. Biretta, J. Baum, S. O'Dea, C. Harris, D. Martel, A.	Univ. of Baltimore STScI STScI STScI CfA Johns Hopkins	Structure and physics of extragalactic jets	1.3, 3.6	5	12.5

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AP452	Perley, R.A. Condon, J.J. Cotton, W.D. Lane, W.M. Cohen, A.S. Kassim, N.E. Lazio, T.J.W. Erickson, W.C.	NRAO-Socorro NRAO-CV NRAO-CV NRL NRL NRL NRL Maryland	4 Meter all-sky survey (4MASS)	400	20, 20, 25, 27, 28	40.4
AR489	Rottgering, H. Cohen, A. Best, P. Kassim, N. Perley, R. Pierre, M. Refregier, A. Rengelink, R. Birkinshaw, M. Bremer, M. Liang, H. Zanichelli, A.	Leiden NRL Edinburgh NRL NRAO-Socorro Saclay Saclay Leiden Bristol Bristol Bristol Milan	Radio source population and XMM large scale structure survey	90, 400	2	7.9
AR516	Rodriguez, L.F. Wilner, D. Ho, P.T.P. Claussen, M. Curiel, S.	UNAM CfA CfA NRAO-Socorro UNAM	Proper motions in the L1551 IRS5 binary jet	3.6 w/Pie Town	8	7.0
AR523	Rupen, M. Dhawan, V. Mioduszewski, A.J. Ribo, M.	NRAO-Socorro NRAO-Socorro NRAO-Socorro Barcelona	X-ray binaries, transients and related sources	0.7, 1.3, 2, 3.6, 6, 20	2,3,5,11-15, 18-20,22,24, 26,27,29	24.6
AR525	Rupen, M. Mioduszewski, A. Blundell, K.	NRAO-Socorro NRAO-Socorro Oxford	Unravelling the precessing jet in SS433	0.7, 1.3, 2, 3.6, 6, 20	10	2.0
AR531	Rothberg, B. Chambers, K. Joseph, R.	IoA IoA IoA	Radio emission associated with galaxy mergers	3.6, 20	20, 26	12.5
AS769	Stairs, I. Briskin, W. Manchester, D. Lyne, A.	British Columbia NRAO-Socorro ATNF Manchester	Precise position for the massive binary pulsar J1740-3052	20 w/Pie Town	3	5.0
AW605	Walter, F. Brinks, E. de Blok, E. Thornley, M. Kennicutt, R.	NRAO-Socorro Guanajuato Univ. Cardif Bucknell U. Arizona	HI structures of nearby galaxies	20 line	21, 22	14.0
AW607	Winn, J. Rusin, D. Kochanek, C. Loveli, J. Fassnacht, C. Koopmans, L.	CfA CfA CfA ATNF Calif.-Davis Caltech	Gravitational lens monitoring	3.6  w/BH111	1-*5,8,11-16 ,18-22,25,26 ,29,30	23.0
AW608	Weiler, K.W. Stockdale, C. Sramek, R. Van Dyk, S.D. Panagia, N. Marcaide, J.M. Lewin, W.H.G. Pooley, D. Immler, S.	NRL NRL NRAO-Socorro IPAC STScI Valencia MIT MIT Penn State	ToO observations of supernovae	1.3, 2, 3.6, 6, 20, 90	14	2.5
AY143	Yusef-Zadeh, F. Roberts, D.A. Baganoff, F.	Northwestern Northwestern MIT	Proper motion of nonthermal filaments at the Galactic center	20	6	4.0
AZ143	Zhao, J.-H. Herrnstein, R.M. Goss, M. Bower, G. Pegg, J.	CfA CfA NRAO-Socorro Calif.-Berkeley CfA	Monitoring quasi-periodic oscillations of SgrA*	0.7, 1.3, 2	14	2.0
BH111	Horiuchi, S. Lister, M. Piner, G. Preston, B.	JPL NRAO-CV Whittier JPL	Magnetic field orientation around polarized core of the superluminal quasar 1642+690	2,6,18 AN107,AW607,AG646	1	6.2
BH116	Homan, D. Cheung, T. Wardle, J.	NRAO-CV Brandeis Brandeis	Small to large scale radio jet structure in the 180 degree misaligned blazar PKS 1510-089	90 w/AF399	9	10.5

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
BR088	Ratner, M.I. Bartel, N. Bietenholz, M.F. Lebach, D.E. Lestrade, J-F. Ransom, R.R. Shapiro, I.I.	CfA York U. York U. CfA Meudon York U. CfA	Astrometry of HR 8703 in 2003 for gravity probe-B mission	3.6 Phased array VLBI	8	12.0
	Staff	NRAO	Baselines, Pointing, Delays Maintenance Move/Operations Polarization Calibrator Monitoring Software General tests			50.0 43.8 30.0 15.0 32.9 49.7

The average downtime was 6.72%.

The array was scheduled for 100% (722.0 hours)  
 515.6 hours (71.4% of time) for astronomical programs  
 129.7 hours (18.0% of time) for tests/calibration  
 76.7 hours (10.6% of time) for maintenance  
 Total 722.0 hours (100.0%) scheduled.

Array was in the A configuration from September 1 through September 8

Array was in the BnA configuration from September 8 through September 30

The following independent proposals shared simultaneous observing time (16.7 hours total simultaneous observing):

Projects	Hours
AF399/BL116	10.5
AG646/BH111	0.2
AN107/BH111	5.0
AW607/BH111	1.0

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Progn#	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AA279	Audard, M. Gudel, M.	Columbia Paul Scherrer	Multi-wavelength study of RZ Cassiopeiae	3.6, 6	21	15.0
AB1085	Bower, G.C. Falcke, H.	Calif.-Berkeley MPIFR	Polarimetry of LLAGN	0.7, 1.3, 2 w/bc138	9	11.0
AB1086	Bower, G.C. Muno, M. Baganoff, F.K.	Calif.-Berkeley MIT MIT	Chandra X-ray sources in central 17 arcmin of the Galaxy	1.3, 3.6	2	5.0
AB1087	Boboltz, D.A. Claussen, M.J.	USNO NRAO-Socorro	Ground-state SiO maser emission toward evolved stars	0.7 line w/Pie Town	23, 24, 25	8.0
AB1089	Brogan, C. Kassim, N. Lazio, J. Gaensler, B. Devine, K.	NRAO-Socorro NRL NRL CfA Carleton	Low frequency galactic plane observations	90 w/bm193	22, 29	17.0
AB1090	Braatz, J. Greenhill, L. Moran, J.	NRAO-GB CfA CfA	Continuum and maser-line emission in nearby AGNs	1.3	28	1.0
AB1093	Blundell, K. Rawlings, S.	Oxford Oxford	High-z FRI quasars	20	21	11.0
AB1096	Butler, B. Slade, M. Haldemann, A. Muhleman, D.	NRAO-Socorro JPL Caltech Caltech	Goldstone/VLA radar observations of Mars	3.6 line	10, 18, 27	24.5
AB1097	Bietenholz, M. Keohane, J.W. Chen, J. Massenburg, S.	York U. NASA North Carolina State North Carolina State	Expansion of 3C58 supernova remnant	20	8	12.0
AC628	Castelletti, G. Kassim, N. Dubner, G.	IAFE NRL IAFE	Supernova remnant W44 at low frequency	90	31	7.5
AC631	Sanchez Contreras, C Sahai, R. Claussen, M.J.	JPL JPL NRAO-Socorro	The 1667 MHz OH masers in the protoplanetary nebula He 3-1475	20	10	3.5
AC647	Clarke, T. Neumann, D. Kassim, N.	Virginia Saclay NRL	Low frequency observations of cooling flow clusters	90 w/BH102	10, 15, 17	15.5
AC677	Coker, C. Lazio, J. Rickard, L.	NRL NRL NRL	Simultaneous radio and optical observations of the ionosphere	w/BM193	24, 28, 30	24.0
AC680	Carilli, C. Cox, P. Bertoldi, F. Walter, F. Djorgovski, G. Mahabal, A. Petric, A. Beelen, A. Lewis, G.	NRAO-Socorro IAP-Paris MPIFR NRAO-Socorro Caltech Caltech Columbia IAP-Paris Sydney U.	Imaging the most distant Einstein ring at 1.4 GHz	20	5	8.0
AC681	Cannon, J.M. Skillman, E.D.	Minnesota Minnesota	Continuum emission in the low-metallicity galaxy I Zw 18	20	3	5.0
AC682	Clarke, T. Kempner, J.	Virginia Virginia	Radio-X-ray power relation for cluster radio halos	90	15	7.5
AC683	Cohen, A. Lane, W. Kassim, N. Lazio, J. Cotton, B. Condon, J. Perley, R.	NRL NRL NRL NRL NRAO-CV NRAO-CV NRAO-Socorro	Ultra-steep spectrum sources	20	15	9.0
AC684	Chapman, S.C. Iverson, R. Steidel, C.C. Baugh, C.	Carnegie Obs Edinburgh Caltech Durham	Deep 1.4-GHz imaging of luminous z~3 protocluster field	20 w/BH102	19, 25	12.5
AD480	Delaney, T. Rudnick, L. Kassim, N. Perley, R.	Minnesota Minnesota NRL NRAO-Socorro	Dense, absorbing clumps in the Cas A SNR	400 w/Pie Town w/BM196/BW67	1	16.0
AD483	Darling, J.	Cornell	OH megamaser galaxies - line and continuum observations	6, 20 w/Pie Town w/BM196	3	24.0



## VLA Utilization Report August 2003

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AF400	Fontani, F. Beltran, M. Cesaroni, R. Testi, L. Walmsley, C.M.	Arcetri Arcetri Arcetri Arcetri	Water masers in candidate massive YSOs	1.3 line	7, 16	4.0
AG646	Gaensler, B. Stappers, B.	CfA Amsterdam	Proper motion studies of young pulsars in SNRs	20 w/Pie Town	17	4.0
AH776	Harris, D.E. Krawczynski, H. Kassim, N. Katz-Stone, D. Lane, W.	CfA Yale Univ. NRL USNA NRL	Jet/intracluster medium interactions of the radio galaxy 3C 129	400 w/Pie Town	17	8.5
AH813	Hardcastle, M. Kraft, R. Worrall, D.	Bristol CfA Bristol	Proper motion and variability in the jet of Cen A	3.6	2	3.5
AH820	Hyman, S. Lazio, J. Neureuther, J. Nord, M. Kassim, N.	Sweet Briar NRL Sweet Briar NRL NRL	Galactic center radio transient monitoring program	90	8, 18	3.0
AH821	Hardcastle, M.	Bristol	Physical conditions and emission mechanisms in 3C351 hotspots	0.7, 1.3, 2	20	7.0
AH822	Harris, D.E. Biretta, J.A. Junor, W.	CfA STScI LLNL	Inner jet of M87: tests of a synchrotron model	1.3, 2, 3.6	24	8.0
AH824	Harper, G. Brown, A. Guinan, E. Brown, J.	Colorado Colorado Villanova Caltech	Evolution of Betelgeuse's extended atmosphere	0.7, 1.3, 2, 3.6, 6, 20 w/Pie Town	10, 12	23.0
AH827	Hota, A. Saikia, D.J.	TIFR NCRA	Two starburst galaxies with outflows: NGC1482 and NGC6764	3.6, 6	11	4.0
AI108	Ivison, R.J. Dunlop, J.S.	ROE Edinburgh	Deep imaging of the SHADES survey: the SCUBA population	20 w/BS130, BM193	1, 23, 24, 25, 29, 30, 31	33.5
AK509	Kulkarni, S.K. Frail, D. Galama, T.J. Bloom, J.S. Berger, E. Harrison, F.A.	Caltech NRAO-Socorro Caltech Caltech Caltech Caltech	Radio afterglows from gamma ray bursts		5, 11, 16, 25	5.5
AK550	Kulkarni, S.R. Berger, E. Soderberg, A.M. Chevalier, R.A.	Caltech Caltech Caltech Virginia	Type Ibc supernovae	1.3, 3.6, 6, 20	1, 15, 21	4.5
AK570	Kassim, N. Lazio, J. Cohen, A. Crane, P. Perley, R. Cotton, W. Carilli, C. Harris, D. Dwarakanath, K. Erickson, W.	NRL NRL NRL NRL NRAO-Socorro NRAO-CV NRAO-Socorro CfA Raman Inst. Maryland	Low-frequency imaging of Cygnus A	400 w/Pie Town	12	14.0
AK571	Kording, E. Colbert, E. Falcke, H.	MPIfR Johns Hopkins MPIfR	Radio loud IXOs	3.6	17, 18, 30	6.0
AL560	Lazio, J. Fabian, A. Kassim, N. Perley, R.	NRL Cambridge NRL NRAO-Socorro	Old radio lobes in the intracluster medium of the Perseus cluster	400	15	12.0
AL589	Loinard, L.	UNAM	Proper motions in embedded protostar IRAS16293-2422	3.6 w/BH102	25	2.0
AL593	Loinard, L. Rodriguez, L.F. Rodriguez, M.I. Duchene, G. Ghez, A.	UNAM UNAM UNAM Calif.-Los Angeles Calif.-Los Angeles	Proper motions of source T Tau Sb: Ejection?	2	20	6.5
AL597	Laing, R.A. Bridle, A.H. Parma, P.	Oxford NRAO-CV Bologna	Spectrum of 3C31 from 74 to 8400 MHz	90, 400 w/Pie Town	13	12.0

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AM723	Marscher, A.P. Jorstad, S. McHardy, I.	Boston Univ. Boston Univ. Southampton	VLA/Chandra imaging of quasar jets	6 w/BM193	28, 29	10.0
AM760	Miller, N.A.	NASA	Unusually compact galaxy in A2255: starburst or AGN?	3.6, 6	14	4.0
AM768	Momjian, E. Romney, J.D. Carilli, C.L. Troland, T.H.	NRAO-Socorro NRAO-Socorro NRAO-Socorro Kentucky	LIRG NGC7674	1.3	11	3.5
AM784	Menten, K. Leurini, S.	MPIfR MPIfR	Proper motions of class I methanol masers	0.7 line	8, 21	3.5
AN112	Neff, S. Rots, A. Fabbiano, G. Zezas, A.	NASA CfA CfA CfA	Radio continuum in the Antennae merger system	20	8	6.0
AP439	Perlman, E.S. Biretta, J. Baum, S. O'Dea, C. Harris, D. Martel, A.	Maryland-Baltimore STScI STScI STScI CfA Johns Hopkins	Structure and physics of extragalactic jets	1.3, 3.6	23	12.0
AP453	Paredes, J.M. Marti, J. Ribo, M.	Barcelona U. Jaen Barcelona	Does LS5039 radio jet extend farther than 1000 au?	2 w/Pie Town w/BM196	4	8.0
AR489	Rottgering, H. Cohen, A. Best, P. Kassim, N. Perley, R. Pierre, M. Refregier, A. Rengelink, R. Birkinshaw, M. Bremer, M. Liang, H. Zanichelli, A.	Leiden NRL Edinburgh NRL NRAO-Socorro Saclay Saclay Leiden Bristol Bristol Bristol Milan	Radio source population and XMM large scale structure survey	90	5	8.5
AR516	Rodriguez, L.F. Wilner, D. Ho, P.T.P. Claussen, M. Curiel, S.	UNAM CfA CfA NRAO-Socorro UNAM	Proper motions in the L1551 IRS5 binary jet	3.6 w/Pie Town	8	8.0
AR518	Rawlings, S. Brand, K. Hill, G. Tufts, J.	Oxford Oxford Texas Texas	Jet alignments in forming super-structures	3.6	3, 28, 29	6.1
AR520	Rudnick, L. Slee, O.B.	Minnesota ATNF	New type of radio galaxy/cluster relic?	3.6, 20	30	2.0
AR523	Rupen, M. Dhawan, V. Mioduszewski, A.J. Ribo, M.	NRAO-Socorro NRAO-Socorro NRAO-Socorro Barcelona	X-ray binaries, transients and related sources	0.7, 1.3, 2, 3.6, 6, 20	3,11,16,18,2 5,27	11.0
AR525	Rupen, M. Mioduszewski, A. Blundell, K.	NRAO-Socorro NRAO-Socorro Oxford	Unravelling the precessing jet in SS433	0.7, 1.3, 2, 3.6, 6, 20 w/BC138	1, 9, 16, 21	8.6
AS761	Sjouwerman, L. Dickel, J. Kong, A. Johnson, K. Williams, B. Dyer, K.	NRAO-Socorro Illinois CfA Wisconsin Delaware NRAO-Socorro	Polarization measurements of the center of M31	6	3	8.0
AS762	Sokoloski, J.L. Mioduszewski, A. Brocksopp, C. Rupen, M.	CfA NRAO-Socorro MSSL NRAO-Socorro	Monitoring symbiotic binaries during outburst	3.6, 6, 20	16	1.0
AS764	Spangler, S.	Iowa	Coronal magnetic fields on scales 1000 to 50000 km	20	16, 18, 31	24.0
AS767	Schinnerer, E. Carilli, C. Scoville, N.Z. Vettolani, P. LeFevre, O. Ciliegi, P. Bondi, M.	NRAO-Socorro NRAO-Socorro Caltech CNR-Bologna Marseille Bologna Bologna	COSMOS 1.4-GHz imaging survey: probing cosmic evolution	20	1	10.0

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Progrm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AU094	Ulvestad, J. Barger, A. Steffen, A. Condon, J.	NRAO-Socorro Wisconsin Wisconsin NRAO-CV	Accretion history of the universe from survey of Lockman hole NW	6 w/BS130	22, 25	9.0
AU095	Umana, G. Trigilio, C. Leone, F. Cerrigone, L.	Noto Noto Catania Catania	Morphologies of young planetary nebulae	3.6	14	1.5
AV268	deVries, W. van Breugel, W. Kassim, N. Cohen, A. Dawson, S. Lacy, M. Rottgering, H.	Lawrence Livermore Lawrence Livermore NRL NRL Calif.-Berkeley Calif.-Davis Leiden	90cm observations of SIRTFF First-Look field	90 w/BH102	17	8.0
AW607	Winn, J. Rusin, D. Kochanek, C. Lovell, J. Fassnacht, C. Koopmans, L.	CfA CfA CfA ATNF Calif.-Davis Caltech	Gravitational lens monitoring	3.6    w/BH102	1,2,5,7,9,10 ,13,14,16,18 ,21,23,25,28 ,30	16.1
AW608	Weiler, K.W. Stockdale, C. Sramek, R. Van Dyk, S.D. Panagia, N. Marcaide, J.M. Lewin, W.H.G. Pooley, D. Immler, S.	NRL NRL NRAO-Socorro IPAC STScI Valencia MIT MIT Massachusetts	ToO observations of supernovae	1.3, 2, 3.6, 6, 20, 90	5, 12, 21, 30	5.5
AZ143	Zhao, J.-H. Herrnstein, R.M. Goss, M. Bower, G. Pegg, J.	CfA CfA NRAO-Socorro Calif.-Berkeley CfA	Monitoring quasi-periodic oscillations of SgrA*	0.7, 1.3, 2	16	2.0
BC138	Cheung, T. Taylor, G. Wardle, J.	Brandeis NRAO-Socorro Brandeis	Three lobe-dominated quasars with radio/optical hotspots	90 Single antenna VLBI w/AB1085, AR525	9	9.9
BF073	Fomalont, E. Geldzahler, B. Bradshaw, C. Fender, R. van der Klis, M. DiSalva, T. Stella, L.	NRAO-CV NASA George Mason Amsterdam Amsterdam Amsterdam Milan	VLBI/INTEGRAL observations of Sco X-1	3.6 Phased array VLBI	1	1.5
BH102	Hoffman, I. Goss, M. Brogan, C. Claussen, M.	NRAO-Socorro NRAO-Socorro NRAO-Socorro NRAO-Socorro	Full Stokes observations of the W44 OH(1720 MHz) masers	20 single antenna VLBI w/AV268, AC647, AL589, AW607, AC684	17, 25	15.0
BM193	Momjian, E. Romney, J.D. Carilli, C.L. Troland, T.H.	Kentucky/NRAO NRAO-Socorro NRAO-Socorro Kentucky	LIRG NGC7674	3.6, 6, 90 Single antenna VLBI w/AB1089, AM723, A1108, AC677, AC628	29, 30, 31	18.1
BM196	Mioduszewski, A.J. Blundell, K. Rupen, M. Taylor, G. Walker, R.C.	NRAO-Socorro Oxford NRAO-Socorro NRAO-Socorro NRAO-Socorro	Movie of the precessing jet and equatorial outflow in SS 433	18 w/AD480, AD483, AP453	1,3,4	6.3
BS130	Stockdale, C.J. Attridge, J.M. Homan, D.C. Cowan, J.J.	NRL Haystack NRAO-CV Oklahoma	Polarimetric and spectral-index mapping of J0253+3835	20 Single antenna VLBI w/AC677, A1108, AU94	24	8.2
BW067	Walker, R.C.	NRAO-Socorro	Patterns in the 3C120 jet from 0.5 to 6 arcseconds	90 w/AD480	2	3.8
	Staff	NRAO	Baselines, Pointing, Delays Maintenance Polarization Calibrator Monitoring Software General tests			68.2 52.0 14.5 28.9 30.7

August

The average downtime was 4.7%.

The array was scheduled for 100% (746.1 hours)  
566.3 hours (75.9% of time) for astronomical programs  
98.9 hours (13.3% of time) for tests/calibration  
80.9 hours (10.8% of time) for maintenance  
Total 746.1 hours (100.0%) scheduled.

Array was in the A configuration from August 1 through August 31  
The following independent proposals shared simultaneous observing time  
(61.4 hours total simultaneous observing):

Projects	Hours
AB1085/BC138	8.0
AB1089/BM193	4.2
AC628/BM193	3.6
AC647/BYH102	2.6
AC677/BM193	4.4
AC677/BS130	3.0
AC684/BH102	4.1
AD480/BM196	2.1
AD480/BW67	3.8
AD483/BM196	2.1
AI108/BM193	3.9
AI108/BS130	3.0
AL589/BH102	2.0
AM723/BM193	2.0
AP453/BM196	2.1
AR525/BC138	1.8
AU94/BS130	2.2
AV268/BH102	5.0
AW607/BH102	1.5

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AB1085	Bower, G.C. Falcke, H.	Calif.-Berkeley MPIfR	Polarimetry of LLAGN	0.7, 1.3, 2	21	11.0
AB1086	Bower, G.C. Muno, M. Baganoff, F.K.	Calif.-Berkeley MIT MIT	Chandra X-ray sources in central 17 arcmin of the Galaxy	1.3, 3.6	26	5.0
AB1092	Beck, S. Turner, J.	Tel Aviv University Calif.-Los Angeles	Compact infrared sources in starburst galaxies	3.6, 6, 20	7	4.0
AB1094	Bik, A. Kurtz, S. Kaper, L. Waters, R. Lenorzer, A.	Amsterdam UNAM Amsterdam Amsterdam Amsterdam	Emission line objects in massive starforming regions	3.6, 6	4	2.0
AB1097	Bietenholz, M. Keohane, J.W. Chen, J. Massenburg, S.	York U. NASA NCSSM NCSSM	Expansion of 3C58 supernova remnant	20	17	12.0
AC676	Capetti, A. Santantoni, L.	Torino Torino	Radio structure of galaxies with type Ia supernovae	20	30	5.5
AC680	Carilli, C. Cox, P. Bertoldi, F. Walter, F. Djorgovski, G. Mahabal, A. Petric, A. Beelen, A. Lewis, G.	NRAO-Socorro IAP-Paris MPIfR NRAO-Socorro Caltech Caltech Columbia IAP-Paris Sydney U.	Imaging the most distant Einstein ring at 1.4 GHz	20	29	8.0
AC682	Clarke, T. Kempner, J.	Virginia Virginia	Radio-X-ray power relation for cluster radio halos	90	27	8.1
AC684	Chapman, S.C. Iverson, R. Steidel, C.C. Baugh, C.	Carnegie Obs ROE Caltech Durham	Deep 1.4-GHz imaging of luminous z~3 protocluster field	20	6, 8	12.0
AC685	Conway, J. Parra, R. Appleton, P. Pihlstrom, Y.	Onsala OSO Caltech NRAO-Socorro	The COLA-north sample	2, 6, 20	19	20.0
AF398	Fanti, C. Rossetti, A. Fanti, R. Dallacasa, D. Stanghellini, C. Gregorini, L. Vigotti, M.	Bologna Bologna Bologna Bologna Noto Bologna Bologna	Cores and hotspots CSS/GPS sources	2 w/GJ10	27	4.0
AF403	Fender, R. Migliari, S. Blundell, K.	Amsterdam Amsterdam Oxford	Simultaneous Chandra and VLA images of SS433's jets and wind	6	10	12.0
AG648	Giroletti, M. Giovannini, G. Taylor, G.B.	Bologna Bologna NRAO-Socorro	Low-power compact radio galaxies	1.3, 3.6	9	2.0
AG650	Golden, A. Muxlow, T. Briskin, W. van der Saluw, E.	Ireland Jodrell Bank NRAO-Socorro Utrecht	Shock structures within PSR B1951+32's plerion and CTB 80	20	2	8.0
AH812	Hagiwara, Y.	ASTRON	Water maser emission in a Seyfert 1 galaxy	1.3 line	4	9.0
AH815	Hagiwara, Y.	ASTRON	Jet water maser in M51	1.3	18	8.0
AH817	Higdon, J.L. Higdon, S.J. Weedman, D.W. Jannuzi, B. Dey, A. Rieke, M.J. Soifer, B.T.	Cornell Cornell Cornell Inst. Advanced Study NOAO Arizona Caltech	Star formation history of the high-z universe: Bootes field	20	27	6.0
AH820	Hyman, S. Lazio, J. Neureuther, J. Nord, M. Kassim, N.	Sweet Briar NRL Sweet Briar NRL NRL	Galactic center radio transient monitoring program	90	5,7,11,12,27	5.5
AH823	Hynes, R.I. Rupen, M.P. Charles, P.A. McClintock, J. Fender, R.	Texas NRAO-Socorro Southampton CfA Amsterdam	Accretion geometry of a quiescent black hole	2, 3.6, 6	28	14.0

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AH825	Hofstadter, M. Butler, B.	JPL NRAO-Socorro	Seasonal variations and depth probing of the Uranus atmosphere	2, 6, 20	11, 12, 13	24.0
A1108	Iverson, R.J. Dunlop, J.S.	ROE Edinburgh	Deep imaging of the SHADES survey: the SCUBA population	20 w/BG129	4,10,15,18,20-23,25	64.0
AJ298	Johnson, K. Seth, A.	Wisconsin Washington	Massive star formation in Magellanic irregular NGC6822	6	29	2.0
AJ300	Jackson, N. Browne, I. Wilkinson, P. Mao, S.	Jodrell Bank Jodrell Bank Jodrell Bank Jodrell Bank	Wide-separation lenses in the CLASS survey	2	12, 26	12.0
AK509	Kulkarni, S.K. Frail, D. Galama, T.J. Bloom, J.S. Berger, E. Harrison, F.A.	Caltech NRAO-Socorro Caltech Caltech Caltech Caltech	Radio afterglows from gamma ray bursts		15,26,27	3.5
AK550	Kulkarni, S.R. Berger, E. Soderberg, A.M. Chevalier, R.A.	Caltech Caltech Caltech Virginia	Type Ibc supernovae	1.3, 3.6, 6, 20	3, 8, 13, 23, 28	7.0
AK569	Kaaret, P. Corbel, S. Rupen, M.	Columbia CEA-Saclay NRAO-Socorro	Radio counterparts to ultraluminous X-ray sources	3.6, 6, 20	15	2.5
AK571	Kording, E. Colbert, E. Falcke, H.	MPIfR Johns Hopkins MPIfR	Radio loud IXOs	3.6	3, 3, 25, 28	8.0
AL596	Lee, T-H. Kwok, S.	Calgary Calgary	Dust distribution and morphology of PNe	1.3, 2	14, 20	20.2
AM764	McHardy, I. Gunn, K. Seymour, N. Mason, K. Page, M.	Southampton Southampton Southampton Univ. College-London Lancaster	Absorption line galaxies in X-ray surveys - hidden BL Lacs?	2, 3.6, 6, 20	20	6.0
AM766	Monnier, J.D. Greenhill, L.J. Ribo, M. Tuthill, P.G. Danchi, W.C.	Michigan Cfa Barcelona Sydney U. NASA	Monitoring colliding wind binary WR112	3.6	5	1.5
AN114	Nagar, N.	Arcetri	Search for multiple AGN in merger systems	2	17	2.5
AN115	Neff, S.G. Ulvestad, J.S.	NASA-GSFC NRAO-Socorro	Survey of AGN in galaxy mergers	3.6	8, 14	11.1
AP457	Perlman, E. Jones, L. Ebeling, H. Scharf, C. Horner, D.	Maryland-Baltimore Birmingham Hawaii Columbia STScI	Evolution of cluster radio galaxies at the highest redshifts	20	11, 16, 22, 28	9.5
AP458	Peck, A. Henkel, C. Tarchi, A. Nagar, N.	Cfa MPIfR Bologna Arcetri	Megamaser in Mrk34: accretion disk or jet interaction?	1.3 line	5	12.0
AR489	Rottgering, H. Cohen, A. Best, P. Kassim, N. Perley, R. Pierre, M. Refregier, A. Rengelink, R. Birkinshaw, M. Bremer, M. Liang, H. Zanichelli, A.	Leiden NRL Edinburgh NRL NRAO-Socorro Saclay Saclay Leiden Bristol Bristol Bristol Milan	Radio source population and XMM large scale structure survey	90, 400	31	8.0
AR501	Roberts, M. Hessels, J. Ransom, S. Kaspi, V.	McGill McGill McGill McGill	Searching for a nebula around PSR J2021+3651	20	24	5.5
AR514	Romani, R. Briskin, W.	Stanford Univ. NRAO-Socorro	In-beam calibrator survey for astrometry of PSR J0538+2817	20	30	2.0
AR517	Romani, R. Ulvestad, J. Michelson, P. Sowards-Emmerd, D.	Stanford Univ. NRAO-Socorro Stanford Univ. Stanford Univ.	Flat spectrum source survey of candidate EGRET blazars	3.6	23, 24, 25	11.5

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AR518	Rawlings, S. Brand, K. Hill, G. Tufts, J.	Oxford Oxford Texas Texas	Jet alignments in forming super-structures	3.6	20	2.5
AR523	Rupen, M. Dhawan, V. Mioduszewski, A.J. Ribo, M.	NRAO-Socorro NRAO-Socorro NRAO-Socorro Barcelona	X-ray binaries, transients and related sources	0.7, 1.3, 2, 3.6, 6, 20 w/BG129	3,9,10,12,16,18,21,25,27,31	18.6
AR525	Rupen, M. Mioduszewski, A. Blundell, K.	NRAO-Socorro NRAO-Socorro Oxford	Unravelling the precessing jet in SS433	0.7, 1.3, 2, 3.6, 6, 20	4,24	3.5
AS701	Sokoloski, J.L. Kaiser, C. Charles, P.A.	CfA MPIA Southampton	Symbiotic binaries during outburst	3.6, 6, 20	24	1.0
AS761	Sjouwerman, L. Dickel, J. Kong, A. Johnson, K. Williams, B. Dyer, K.	NRAO-Socorro Illinois CfA Wisconsin Delaware NRAO-Socorro	Polarization measurements of the center of M31	6	5	8.0
AS767	Schinnerer, E. Carilli, C. Scoville, N.Z. Vettolani, P. LeFevre, O. Ciliegi, P. Bondi, M.	NRAO-Socorro NRAO-Socorro Caltech CNR-Bologna Marseille Bologna Bologna	COSMOS deep 1.4-GHz imaging survey: probing cosmic evolution	20	25	5.0
AT291	Tarchi, A. Henkel, C. Moscadelli, L. Chiaberge, M. Menten, K.	Bologna MPIFR Cagliari MPIFR MPIFR	3C 403: first water megamaser in a FR II galaxy	1.3 line	22, 25	12.0
AU094	Ulvestad, J. Barger, A. Steffen, A. Condon, J.	NRAO-Socorro Wisconsin Wisconsin NRAO-CV	Accretion history of the universe from survey of Lockman hole NW	6	6, 7, 11-13,22,23	77.0
AU095	Umana, G. Trigilio, C. Leone, F. Cerrigone, L.	Noto Noto Catania Catania	Morphologies of young planetary nebulae	3.6	10	3.5
AV268	deVries, W. van Breugel, W. Kassim, N. Cohen, A. Dawson, S. Lacy, M. Rottgering, H.	Lawrence Livermore Lawrence Livermore NRL NRL Calif.-Berkeley Calif.-Davis Leiden	90cm observations of SIRTf First-Look field	90	1, 3	11.6
AW599	Whysong, D. Antonucci, R. Geller, R.	Calif.-Santa Barbara Calif.-Santa Barbara Calif.-Santa Barbara	Search for Thompson scattering in the intergalactic medium	20	8, 15	8.0
AW607	Winn, J. Rusin, D. Kochanek, C. Lovell, J. Fassnacht, C. Koopmans, L.	CfA CfA CfA ATNF Calif.-Davis Caltech	Gravitational lens monitoring	3.6  w/BM196	4-6,8,9,11,13,15,16,18,21,22,27,29	22.6
AW608	Weiler, K.W. Stockdale, C. Sramek, R. Van Dyk, S.D. Panagia, N. Marcaide, J.M. Lewin, W.H.G. Pooley, D. Immler, S.	NRL NRL NRAO-Socorro IPAC STScI Valencia MIT MIT Massachusetts	ToO observations of supernovae	1.3, 2, 3.6, 6, 20, 90	3,8,15,18,20,22,25,28	9.5
AY143	Yusef-Zadeh, F. Roberts, D.A. Baganoff, F.	Northwestern Northwestern MIT	Proper motion of nonthermal filaments at the Galactic center	20	17	8.0
AZ143	Zhao, J.-H. Herrnstein, R.M. Goss, M. Bower, G. Pegg, J.	CfA CfA NRAO-Socorro Calif.-Berkeley CfA	Monitoring quasi-periodic oscillations of SgrA*	0.7, 1.3, 2	16	2.0

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
BC137	Cesaroni, R. Moscadelli, L. Furuya, R.S. Beltran, M.T. Codella, C. Testi, L.	Arcetri Cagliari Arcetri Arcetri CNR-Roma Arcetri	Water and OH masers tracing bipolar outflows in G24.78+0.08	1.3 line	5	0.5
BC139	Claussen, M.J. Goss, M. Moellenbrock, G.A. Beasley, A.J.	NRAO-Socorro NRAO-Socorro NRAO-Socorro OVRO	Tests of water maser phase referencing	1.3 line	25	3.0
BF073	Fomalont, E. Geldzahler, B. Bradshaw, C. Fender, R. van der Klis, M. DiSalva, T. Stella, L.	NRAO-CV NASA HQ George Mason Amsterdam Amsterdam Amsterdam Milan	VLBI/INTEGRAL observations of Sco X-1	3.6 Phased array VLBI	30, 31	18.3
BG129	Greenhill, L.J. Chandler, C.J. Reid, M.J. Moran, J.M. Diamond, P.J.	CfA NRAO-Socorro CfA CfA Jodrell Bank	SiO proper motions in Orion KL	0.7 Single antenna VLBI w/A1108, AR523, Tests	18	8.0
BM196	Mioduszewski, A.J. Blundell, K. Rupen, M. Taylor, G. Walker, R.C.	NRAO-Socorro Oxford University NRAO-Socorro NRAO-Socorro NRAO-Socorro	Movie of the precessing jet and equatorial outflow in SS 433	18 w/AW607	19	2.0
	Staff	NRAO	Baselines, Pointing, Delays Maintenance Polarization Calibrator Monitoring Software Student Observations General tests			29.6 49.1 13.0 31.7 7.0 32.9

The average downtime was 6.7%.

The array was scheduled for 100% (746.1 hours)  
 596.6 hours (80.0% of time) for astronomical programs  
 68.8 hours (9.2% of time) for tests/calibration  
 80.7 hours (10.8% of time) for maintenance  
 Total 746.1 hours (100.0%) scheduled.

Array was in the A configuration from July 1 through July 31  
 The following independent proposals shared simultaneous observing time  
 (10.0 hours total simultaneous observing):

Projects	Hours
A1108/BG129	5.0
AR523/BG129	1.5
AW607/BM196	2.0
Test/BG129	1.5



## VLA Utilization Report June 2003

Prog#	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AA282	Anglada, G. Rodriguez, L.F. Torrelles, J.M. Ro, P.T.P.	IAA UNAM Barcelona Cfa	Formation of disks and jets in young binaries: SVS 13	1.3 with PT	12	12.0
AB1069	Beswick, R. Pedlar, A. Muxlow, T. Wills, K. Gallimore, J. Strong, M.	Manchester Manchester Manchester Sheffield U. Bucknell Manchester	HI emission and absorption in starburst galaxies	20 line	8, 22	10.0
AB1088	Boboltz, D.A. Hollis, J.M. Diamond, P.J. Johnston, K.J. Fey, A.L.	USNO NASA-GSFC Manchester USNO USNO	43-GHz SiO maser emission toward late-type stars	0.7 line	23	14.0
AB1090	Braatz, J. Greenhill, L. Moran, J.	NRAO-GB Cfa Cfa	Continuum and maser-line emission in nearby AGNs	1.3	4, 6	6.6
AB1091	Beelen, A. Cox, P. Carilli, C. Mohan, N. Omont, A. Bertoldi, F. Petric, A.	IAP (Paris) IAP (Paris) NRAO-Socorro IAP (Paris) IAP (Paris) MPIFR Columbia	Imaging host galaxies of $1.5 < z < 5$ QSOs	20	19, 22	17.5
AB1094	Bik, A. Kurtz, S. Kaper, L. Waters, R. Lenorzer, A.	Amsterdam UNAM Amsterdam Amsterdam Amsterdam	Emission line objects in massive starforming regions	3.6, 6	27	2.0
AC616	Colina, L. Alberdi, A. Torrelles, J.M. Panagia, N. Wilson, A.	IFCA/CSIC IAA IEEC-Barcelona STScI Maryland	Search for new radio supernovae in NGC 7469	3.6	19	4.0
AF398	Fanti, C. Rossetti, A. Fanti, R. Dallacasa, D. Stanghellini, C. Gregorini, L. Vigotti, M.	Bologna Bologna Bologna Bologna Noto Bologna Bologna	Cores and hotspots CSS/GPS sources	2 w/GJ10	3	5.0
AF399	Fey, A. Boboltz, D. Johnston, K. Claussen, M. Gaume, R.	USNO USNO USNO NRAO-Socorro USNO	Radio star observations for a radio/optical frame tie	3.6 with PT w/BW67, BC128, BM184	6	48.0
AF402	Falcke, H. Huttemeister, S. Leipski, C.	MPIFR Bochum Bochum	Imaging radio-quiet quasars	6	15, 17	27.5
AG648	Giroletti, M. Giovannini, G. Taylor, G.B.	Bologna Bologna NRAO-Socorro	Low-power compact radio galaxies	1.3, 3.6	28, 29	4.0
AH785	Hofner, P. Araya, E. Linz, H. Olmí, L. Kurtz, S. Cesaroni, R.	Puerto Rico Puerto Rico Tautenburg Puerto Rico UNAM Arcetri	Interior structure of the hot-molecular core G31.41+0.31	1.3, 3.6	10, 11	10.0
AH816	Hofner, P. Araya, E. Olmí, L. Linz, H. Kurtz, S. Cesaroni, R.	Puerto Rico Puerto Rico Puerto Rico Tautenburg UNAM Arcetri	Massive proto-binary in G31.41+0.31 hot molecular core	0.7	5, 24	16.0
AH817	Higdon, J.L. Higdon, S.J. Weedman, D.W. Jannuzi, B. Dey, A. Rieke, M.J. Soifer, B.T.	Cornell Cornell Cornell Inst. Advanced Study NOAO Arizona Caltech	Star formation history of the high-z universe: Bootes field	20	26, 27	12.0
AH819	Hoare, M. Busfield, A.	Leeds Leeds	Stellar winds from massive young stellar objects	3.6 with PT	15	10.0

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AH822	Harris, D.E. Biretta, J.A. Junor, W.	CfA STScI LANL	Inner jet of M87: tests of a synchrotron model	1.3, 2, 3.6 w/pointing	2	8.0
AH827	Hota, A. Saikia, D.J.	TIFR TIFR	Two starburst galaxies with outflows: NGC1482 and NGC6764	3.6, 6	26	4.0
AI106	Imai, H. Diamond, P.J. Deguchi, S. Nakashima, J. Miyazaki, A.	JIVE Manchester NAOJ NAOJ NAOJ	Central object and circumstellar envelope of AGB star W43A	0.7	20	10.0
AJ297	Johnston, K.J. Fey, A. Boboltz, D.A. Gaume, R.A. Claussen, M.J.	USNO USNO USNO USNO NRAO-Socorro	Astrometry and polarimetry of the T Tau System	0.7, 1.3, 2, 3.6, 6 with PT	23	12.0
AJ299	Johnson, K. Plante, S.	Wisconsin Laval	Star cluster formation at low metallicities: SBS0335-052	3.6, 6	27	4.0
AJ300	Jackson, N. Browne, I. Wilkinson, P. Mao, S.	Manchester Manchester Manchester Manchester	Wide-separation lenses in the CLASS survey	2	20	3.5
AK509	Kulkarni, S.K. Frail, D. Galama, T.J. Bloom, J.S. Berger, E. Harrison, F.A.	Caltech NRAO-Socorro Caltech Caltech Caltech Caltech	Radio afterglows from gamma ray bursts	w/GJ10, PH105, BR87	3,4,9,14,19, 24,30	16.0
AK550	Kulkarni, S.R. Berger, E. Soderberg, A.M. Chevalier, R.A.	Caltech Caltech Caltech Virginia	Type Ibc supernovae	1.3, 3.6, 6, 20 w/GJ10	3, 16, 16, 27, 30	9.0
AK565	Kardeshev, N.S. Rupen, M. Slee, O.B. Tsarevsky, G.S. de Freitas Pacheco,	ASC NRAO-Socorro ATNF ATNF Obs. Nice	Search for new microquasars among ROSAT sources	6, 20	8	8.0
AK566	Kunert, M. Marecki, A. Spencer, R.	Torun Torun Manchester	MSO objects without cores or hot spots	6	29	2.0
AK571	Kording, E. Colbert, E. Falcke, H.	MPIfr Johns Hopkins MPIfr	Radio loud IXOs?	3.6 w/GJ10	2, 3	4.0
AL592	Loinard, L. Rodriguez, L.F. Wilner, D. Ho, P. D'Alessio, P.	UNAM UNAM CfA CfA UNAM	Isolated accretion disks in IRAS16293-2422	0.7	21	6.0
AM707	Murgia, M. Parma, P. Fanti, R. deRuiter, H. Bondi, M. Ekers, R. Fomalont, E.	Bologna Bologna Bologna Bologna ATNF NRAO-CV	Low frequency observations of the radio galaxy NGC 326	90	15	3.0
AM759	Miller, N. Oegerle, W.R.	NASA-GSFC NASA-GSFC	Continuum imaging of Butcher-Oemler cluster A2111	20 w/GJ10	3, 8	10.0
AM763	Martin, S.C. dePater, I. Gibbard, S.	Calif., Berkeley Calif., Berkeley LLNL	Lower tropospheric motions in Neptune	2, 3.6, 6	25, 26, 27	24.0
AM771	Mohan, R.N. Beelen, A. Omont, A. Carilli, C. Cox, P. Bertoldi, F. Petric, A.	IAP (Paris) IAP (Paris) IAP (Paris) NRAO-Socorro IAP (Paris) MPIfr Columbia	Mapping starbursts in host galaxies of $z \sim 1$ QSOs	20	24, 28, 29	12.5
AM773	Mirabel, I.F. Ribo, M. Marti, J.	Saclay Barcelona Jaen	Simultaneous observations with INTEGRAL GPS	2, 3.6, 6, 20 w/GJ10	4	6.0
AN114	Nagar, N.	Arcetri	Search for multiple AGN in merger systems	2	19, 20	7.8
AO170	O'Dea, C. Guerra, E. Daly, R. Donahue, M.	STScI Rowan Penn State STScI	Propagation of powerful radio galaxies	3.6, 20, 90	17	6.0

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AP454	Pedlar, A. Muxlow, T. Beswick, R. Wills, K. Aalto, S. Booth, R. Thrall, H. Smith, R.	Manchester Manchester Manchester Sheffield U. Onsala Onsala Manchester AAO	Mainline OH masers in the M82 starburst	20 line w/BM129	13	18.0
AP457	Perlman, E. Jones, L. Ebeling, H. Scharf, C. Horner, D.	Baltimore Birmingham Hawaii Columbia STScI	Evolution of cluster radio galaxies at the highest redshifts	20 w/GJ10	3	3.5
AR513	Rodriguez, L.F. Reipurth, B.	UNAM Hawaii	Study of the exciting source of the HH92 jet	3.6	21	10.5
AR514	Romani, R. Brisken, W.	Stanford NRAO-Socorro	In-beam calibrator survey for astrometry of PSR J0538+2817	20	19	2.0
AR518	Rawlings, S. Brand, K. Hill, G. Tufts, J.	Oxford Oxford Texas Texas	Jet alignments in forming super-structures	3.6	2,26,27	5.0
AR520	Rudnick, L. Slee, O.B.	Minnesota ATNF	New type of radio galaxy/cluster relic?	3.6, 20	29	6.0
AR523	Rupen, M. Dhawan, V. Mioduszewski, A.J. Ribo, M.	NRAO-Socorro NRAO-Socorro NRAO-Socorro Barcelona	X-ray binaries, transients and related sources	0.7, 1.3, 2, 3.6, 6, 20 w/GJ10	4,9,11,16,18 ,30	7.5
AR524	Rusin, D. Winn, J.N. Kochanek, C.S.	CfA CfA CfA	Possible third image of gravitational lens PMN J1632-0033	0.7, 2 w/BH105	14	8.0
AR525	Rupen, M. Mioduszewski, A. Blundell, K.	NRAO-Socorro NRAO-Socorro Oxford	Unravelling the precessing jet in SS433	0.7, 1.3, 2, 3.6, 6, 20 w/GJ10	3, 10, 20, 25	8.0
AS760	Smith, J. Robinson, A. Gallimore, J.F. Axon, D. Corbett, E.	Hertfordshire Hertfordshire Bucknell Hertfordshire Mt. Stromlo	Radio axes and the optical polarization of Seyfert 1s	3.6, 20	19, 30	4.5
AS761	Sjowerman, L. Dickel, J. Kong, A. Johnson, K. Williams, B. Dyer, K.	NRAO-Socorro Illinois CfA Wisconsin Delaware NRAO-Socorro	Polarization measurements of the center of M31	6	2	8.0
AS765	Surdej, J. Coleman, P. Sluse, D. Jean, C. Claeskens, J-F. Smette, A. Warren, S.J. Dye, S.	Belgium Kapteyn Belgium Belgium Liege Belgium Imperial College Imperial College	Observations of the nearest gravitationally lensed quasar	3.6, 6, 20	23	3.0
AS770	Strasser, S.T. Dickey, J.M. Taylor, A.R.	Minnesota Minnesota Calgary	Study of very cold neutral hydrogen clouds	20 line	9	6.0
AV267	Van Dyk, S.D.	IPAC	Search for radio supernovae in Wolf-Rayet galaxies	20	29	5.0
AV268	deVries, W. van Breugel, W. Kassim, N. Cohen, A. Dawson, S. Lacy, M. Rottgering, H.	LLNL LLNL NRL NRL Calif.-Berkeley Calif.-Davis Leiden	90cm observations of SIRTf First-Look field	90 w/BR87	4,30	11.4
AW606	Wucknitz, O. Browne, I. Biggs, A. Jackson, N. York, T.	Potsdam Manchester Manchester Manchester Manchester	LensCLEANing B0218+357 to derive H0	2 With PT w/BH105	1, 14, 26	17.5

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AW607	Winn, J. Rusin, D. Kochanek, C. Lovell, J. Fassnacht, C. Koopmans, L.	CfA CfA CfA ATNF Calif.,Davis Caltech	Gravitational lens monitoring	3.6  w/BR87	3,5,9,11,14, 15,19,22,23, 25,29,30	11.1
AW608	Weiler, K.W. Stockdale, C. Sramek, R. Van Dyk, S.D. Panagia, N. Marcaide, J.M. Lewin, W.H.G. Pooley, D. Inmler, S.	NRL NRL NRAO-Socorro IPAC STScI Valencia MIT MIT Massachusetts	ToO observations of supernovae	1.3, 2, 3.6, 6, 20, 90	16-18, 25	8.2
AZ144	Zhao, J.-H. Roy, S. Goss, M. Rao, P.	CfA NCRA NRAO-Socorro NCRA	Low frequency spectral shape of SgrA*	3.6, 6, 20, 90 w/BH102	16	8.0
BB169	Bartel, N. Bietenholz, M.F. Rupen, M.	York York NRAO-Socorro	SN 1986J - search for a pulsar nebula	3.6 Phased array VLBI	22	12.0
BC128	Claussen, M.J. Marvel, K. Wilking, B.A. Wootten, H.A.	NRAO-Socorro AAS UMSL NRAO-CV	VLBA Monitoring of Water masers around low and intermediate luminosity young stellar objects	1.3 w/AF399	6	7.6
BC139	Claussen, M.J. Goss, M. Moellenbrock, G.A. Beasley, A.J.	NRAO-Socorro NRAO-Socorro NRAO-GB OVRO	Tests of water maser phase referencing	1.3	19	3.0
BD087	Dhawan, V. Fomalont, E. Lestrade, J-F. Rupen, M. Mioduszewski, A.	NRAO-Socorro NRAO-CV Meudon NRAO-Socorro NRAO-Socorro	VLB Astrometry of x-ray binaries	2, 3.6	28	15.9
BG129	Greenhill, L.J. Chandler, C.J. Reid, M.J. Moran, J.M. Diamond, P.J.	CfA NRAO-Socorro CfA CfA Manchester	SiO proper motions in Orion KL	0.7 Single antenna VLBI w/AP454	13	8.0
BH102	Hoffman, I. Goss, M. Brogan, C. Claussen, M.	NRAO-Socorro NRAO-Socorro NRAO-Socorro NRAO-Socorro	Full stokes observations of the W44 OH(1720 MHz) masers	20 single antenna VLBI w/AZ143	16	7.3
BH105	Hough, D. Aars, C.	Trinity University Texas Christian Univ	Variability in the nuclei of lobe-dominated quasars, Part II	2, 3.6	14	11.9
BM184	Moscadelli, L. Claussen, M.J. Furuya, R. Kitamura, Y. Testi, L. Wootten, H.A.	Cagliari Obs. NRAO-Socorro Arcetri Obs. ISAS Arcetri Ob. NRAO-CV	Low-mass YSOs explored by H2O masers	1.3	7	7.5
BM192	Macquart, J-P. deBruyn, A.G. Gabuzda, D.C. Gurvits, L.I. Dennett-Thorpe, J.	Groningen NFRA Cork JIVE Groningen	Imaging the IDV quasar J1819+3845 at 22 GHz	1.3 Phased array VLBI	12	14.5
BR087	Rector, T. Gabuzda, D. Peterson, K.	NRAO-Socorro Cork Yale	High energy peaked BL Lac objects	6, 20 Single antenna VLBI w/AK509,AW607,AV268	30	6.3
BT069	Taylor, G. Berger, E. Frail, D.A. Kulkarni, S.	NRAO-Socorro Caltech NRAO-Socorro Caltech	VLBA Observations of GRB 030329	2,3.6,6	20	3.7
BW067	Walker, R.C. Hardee, P.E.	NRAO-Socorro University of Alabam	Patterns in the 3C120 jet from 0.5 to 6 arcseconds	90	6	2.0

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
GB046	Bartel, N. Rupen, M. Bietenholz, M. Beasley, A.J. Graham, D. Altunin, V. Venturi, T. Umana, G. Cannon, W. Conway, J.	York NRAO-Socorro York OVRO MPIFR JPL Bologna Noto York Onsala	SN 1993J and center of M81: morphological and spectral evolution	6 Phased array VLBI	1	12.0
GJ010	Jackson, N. Wilkinson, P. Browne, I. York, T. Mao, S. Biggs, A. Koopmans, L. deBruyn, A.G.	Manchester Manchester Manchester Manchester Manchester Caltech NFRA	Substructure in CLASS lensing galaxies	6 Single antenna VLBI w/AR525,Baselines,AF398,AP457,AK550,AK509,AK571,AM759,AM773	3	32.1
GM049	Macquart, J-P. deBruyn, A.G. Gabuzda, D.C. Gurvits, L.I. Dennett-Thorpe, J.	Groningen NFRA Cork JIVE Groningen	Brightness temperature from polarimetry of IDV quasar J1819+3845	3.6, 6 Phased array VLBI	1	10.5
	Staff	NRAO	Baselines, Pointing, Delays Maintenance Move/Operations Polarization Calibrator Monitoring Software General tests			39.4 44.5 10.9 15.5 28.6 26.6

*Done*

The average downtime was 2.5%.

The array was scheduled for 100% (722.0 hours)  
575.4 hours (79.7% of time) for astronomical programs  
73.5 hours (10.2% of time) for tests/calibration  
73.1 hours (10.1% of time) for maintenance  
Total 722.0 hours (100.0%) scheduled.

Array was in the A configuration from June 1 through June 30  
The following independent proposals shared simultaneous observing time  
(85.9 hours total simultaneous observing):

Projects	Hours
AF398/GJ10	5.0
AF399/BC128	7.6
AF399/BM184	7.5
AF399/BW67	2.0
AH822/Pointing	1.1
AK509/BH105	3.0
AK509/BR87	1.9
AK509/GJ10	1.0
AK509/GJ10	2.1
AK550/GJ10	1.5
AK571/GJ10	2.0
AM759/GJ10	5.0
AM773/GJ10	6.0
AP454/BG129	8.0
AP457/GJ10	3.5
AR523/GJ10	0.6
AR524/BH105	2.4
AR525/GJ10	2.0
AV268/BR87	3.4
AW606/BH105	6.5
AW607/BR87	1.0
AZ143/BH102	7.3
Baselines/GJ10	0.5
Test/GJ10	2.0
Test/GJ10	2.0
Test/GJ10	1.0

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AA278	Anderson, J.M. Ulvestad, J.S.	NMINT NRAO-Socorro	Estimating LLAGN sizes using intraday variability	3.6	16, 17, 18, 20, 24, 26	51.5
AA280	Araya, E. Hofner, P. Churchwell, E. Sewilo, M. Watson, C. Linz, H. Kurtz, S.	Puerto Rico Puerto Rico Wisconsin Wisconsin Wisconsin Puerto Rico UNAM	Formaldehyde 6cm emission toward IRAS 18566+0804	2 line	10	8.0
AB1038	Bolatto, A. Leroy, A. Simon, J. Blitz, L.	Calif.-Berkeley Calif.-Berkeley Calif.-Berkeley Calif.-Berkeley	Atomic hydrogen in dwarf galaxies	20 line	9	5.5
AB1054	Braine, J. Vallejo, O.	Bordeaux Bordeaux	Dark matter content of NGC 4414	20 line	5, 10	12.0
AB1059	Bastian, T.S. Gary, D.E. Lee, J.W. Benz, A.O. Vilmer, N. Klein, K.-L.	NRAO-CV NJIT Arizona ETH Paris Obs. Paris Obs.	Joint microwave and hard x-ray imaging of impulsive solar flares	0.7, 1.3, 2	3, 4	16.0
AC671	Carilli, C. Walter, F.	NRAO-Socorro NRAO-Socorro	Highest Redshift QSO	0.7	3,8,13	18.0
AC676	Capetti, A. Santantoni, L.	Torino Torino	Radio structure of galaxies with type Ia supernovae	20	31	4.6
AF398	Fanti, C. Rossetti, A. Fanti, R. Dallacasa, D. Stanghellini, C. Gregorini, L. Vigotti, M.	Bologna Bologna Bologna Bologna Noto Bologna Bologna	Cores and hotspots CSS/GPS sources	2	31	5.0
AJ302	Jonker, P. Fender, R. Dubus, G. Dhawan, V. Rupen, M.	Cambridge Amsterdam IAP NRAO-Socorro NRAO-Socorro	X-ray transient XTE J1908+094	3.6	13, 13	9.5
AK509	Kulkarni, S.K. Frail, D. Galama, T.J. Bloom, J.S. Berger, E. Harrison, F.A.	Caltech NRAO-Socorro Caltech Caltech Caltech Caltech	Radio afterglows from gamma ray bursts	0.7, 1.3, 2, 3.5, 6, 20	1,2,4,9,10,1 2,13,15,22,2 4,27	17.0
AK550	Kulkarni, S.R. Berger, E. Soderberg, A.M. Chevalier, R.A.	Caltech Caltech Caltech Virginia	Type Ibc supernovae	1.3, 3.6, 6, 20	5, 17, 23	3.0
AK557	Kothes, R. Landecker, T.	DRAO DRAO	HI absorption in four supernova remnants for kinematic distances	20 line	8	2.5
AK558	Kumar, M.S. Shepherd, D. Tafalla, M.	CAUP NRAO-Socorro CfA	A dark core inside a compact young star cluster	1.3 line	1	14.0
AL586	Lockman, F.J. Rupen, M.P. Liszt, H.	NRAO-GB NRAO-Socorro NRAO-CV	Structure and shape of newly discovered halo HI clouds	20 line w/BH102	6, 9	11.0
AL587	Lang, C.C. Lazio, J.	Iowa NRL	Higher frequency mosaic of the galactic center	6	10	5.0
AM744	Mirabel, I.F. Ribo, M. Martí, J.	Saclay Barcelona U. Jaen	Simultaneous observations with the INTEGRAL galactic plane survey	2, 3.6, 6, 20	11	6.0
AM748	Menten, K.M. Reid, M.J. Beuther, H.	MPIfR CfA MPIfR	Sensitive search for SiO masers in star-forming regions	0.7 line	1	4.0
AM750	Mayo, E. Troland, T. Crutcher, R.	Kentucky Kentucky Illinois	Zeeman effect in Cygnus X	20 line	2, 5	22.0
AM756	Mundy, L. Henning, T. Wilner, D. Chandler, C.	Maryland MPIA CfA NRAO-Socorro	Dust properties in T Tauri systems: VLA 7mm observations	0.7, 1.3 w/BG129	12	8.0

## VLA Utilization Report May 2003

Progrm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AM766	Monnier, J.D. Greenhill, L.J. Ribo, M Tuthill, P.G. Danchi, W.C.	CfA CfA Barcelona Sydney NASA/GSFC	Monitoring colliding wind binary WR112	3.6 w/BH102	15	1.6
AM776	Mirabel, F. Ribo, M.	Saclay Barcelona	4U1755-33 in D configuration	20	8	1.0
AO172	Osten, R.A. Brown, A. Bastian, T.	NRAO-CV Colorado NRAO-CV	Coherent emission from active binary systems	20, 90 w/G036	22,25	25.0
AP456	Peck, A. Henkel, C. Gallimore, J.	CfA MPIFR Bucknell	Molecular cloud in the core of Mrk348	6, 20 line	29	12.0
AP460	Pihlstrom, Y. Murphy, M.	NRAO-Socorro NSW	Quasar flux densities	1.3	8, 20	1.0
AR505	Ratay, D.L. Gottesman, S.T.	Florida Florida	HI Observations of barred, flocculent galaxies	20 line	1, 4	10.0
AR508	Rupen, M.P. Mioduszewski, A.J. Dhawan, V. Ribo, M.	NRAO-Socorro NRAO-Socorro NRAO-Socorro Barcelona	Galactic x-ray binaries	20	1,3,4,7,8,10	10.0
AR523	Rupen, M. Dhawan, V. Mioduszewski, A.J. Ribo, M.	NRAO-Socorro NRAO-Socorro NRAO-Socorro Barcelona	X-ray binaries, transients and related sources	0.7, 1.3, 2, 3.6, 6, 20	15-17,19,20, 23,26,29-30	11.8
AR526	Ribo, M. Negueruela, I. Mirabel, F.	Barcelona Strasbourg Saclay	HMXB 4U2206+54	3.6	20	2.0
AS745	Solomon, P. Vanden Bout, P. Carilli, C.	SUNY NRAO-CV NRAO-Socorro	Dense molecular gas and star formation in high redshift galaxies	1.3 line	1	1.6
AS762	Sokoloski, J.L. Mioduszewski, A. Brocksopp, C. Rupen, M.	Southampton NRAO-Socorro MSSL NRAO-Socorro	Monitoring symbiotic binaries during outburst	3.6, 6, 20	27	2.0
AS771	Sollins, P.K. Ho, P.T.P. Zhang, Q. Keto, E.	CfA CfA CfA CfA	Searching for infall in hot molecular cores	1.3 line	13	7.0
AT286	Thornley, M. Kennicutt, R. Kewley, L. Helou, G.	Bucknell Arizona CfA IPAC	Radio-FIR relation on kpc scales in SIRTIF Nearby Galaxy Survey	20 w/BH102	8, 11	2.0
AT292	Tyson, J. Fassnacht, C. Becker, A. Comerford, J. Dell'Antonio, I. Hennawi, J. Margoniner, V. Turner, E.	Bell Labs Calif.-Davis Bell Labs Calif., Berkeley Brown University Princeton Bell Labs Princeton	Q2345+007AB: wide separation lens or accidental QSO pair?	6 w/BM186,GP36	19, 20, 23, 24, 26, 30	48.5
AT293	Testi, L. Shepherd, D.S.	Arcetri NRAO-Socorro	Dust in HD163296	0.7	17	2.5
AV266	Vlemmings, W.H.T. van Langevelde, H.J. Diamond, P.J. Chatterjee, S.	Cornell JIVE Jodrell Bank Cornell	Survey for in-beam calibrators for OH maser astrometry	3.6	21	5.1
AW593	Weiler, K.W. Stockdale, C. Sramek, R.A. Van Dyk, S.D. Panagia, N. Marcaide, J.M. Lewin, W.H.G. Pooley, D. Immler, S.	NRL NRL NRAO-Socorro IPAC STScI Valencia MIT MIT Massachusetts	ToO observations of Supernovae	1.3, 2, 3.6, 6, 20, 90	12	1.5
AW601	Wilcots, E.M. Pisano, D.J. Freeland, E.	Wisconsin ATNF Wisconsin	The dynamical evolution of galaxy groups	20 line	11	5.0
AW602	Wilkin, F.P. Loinard, L.	UNAM UNAM	SiO in the NGC 1333 IRAS 2A protostellar outflow	0.7 line	2, 8	11.0



## VLA Utilization Report May 2003

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AW603	Walsh, A.J. Zhang, Q. Myers, P.C. Di Francesco, J. Bourke, T.L. Wilner, D.	CfA CfA CfA CfA CfA CfA	Cluster formation in NGC 1333	1.3 line	9, 10, 11	30.5
AW607	Winn, J. Rusin, D. Kochanek, C. Lovell, J. Fassnacht, C. Koopmans, L.	CfA CfA CfA ATNF Calif.-Davis Caltech	Gravitational lens monitoring	3.6 w/GP36	21, 24, 27, 30	4.0
AW609	Weiler, K.W. Stockdale, C. Sramek, R.A. Van Dyk, S.D. Panagia, N. Marcaide, J.M. Lewin, W.H.G. Pooley, D. Immler, S.	NRL NRL NRAO-Socorro IPAC STScI Valencia MIT MIT MIT	Long term monitoring of radio supernovae	1.3, 2, 3.6, 6, 20, 90 w/BM186	23, 25, 27, 27	36.0
AX008	Xu, Y. Greenhill, L.J. Menten, K. Moscadelli, L. Reid, M.J. Zheng, X.W.	Nanjing CfA MPIFR Cagliari CfA Nanjing	Search for calibrators near W30H	6, 20	30	2.0
AZ143	Zhao, J.-H. Herrnstein, R.M. Goss, M. Bower, G. Pegg, J.	CfA CfA NRAO-Socorro Calif.-Berkeley CfA	Monitoring quasi-periodic oscillations of SgrA*	0.7, 1.3, 2	19	2.0
BG129	Greenhill, L.J. Chandler, C.J. Reid, M.J. Moran, J.M. Diamond, P.J.	CfA NRAO-Socorro CfA CfA Jodrell Bank	SiO proper motions in Orion KL	0.7 Single antenna VLBI w/AM756	12	4.2
BG134	Greenhill, L.J. Kondratko, P.T. Lovell, J.E.J. Kuiper, T.B.H. Moran, J.M. Jauncey, D.L.	CfA Harvard ATNF JPL CfA ATNF	Follow-up imaging of water megamasers detected with the DSN	1.3 Phased array VLBI	16	9.8
BH102	Hoffman, I. Goss, M. Brogan, C. Claussen, M.	UNM/NRAO NRAO-Socorro NRAO-Socorro NRAO-Socorro	Full stokes observations of the W44 OH(1720 MHz) masers	20 Single antenna VLBI w/AT286,AL586,Test,AM766	9,14	14.6
BH114	Hoffman, I. Goss, W.M. Palmer, P.	UNM/NRAO NRAO-Socorro Chicago	The 6cm formaldehyde masers in Sgr B2	6 Phased array VLBI	17, 21	8.0
BN186	Momjian, E. Romney, J.D. Carilli, C.L. Troland, T.H.	Kentucky/NRAO NRAO-Socorro NRAO-Socorro Kentucky	OH and continuum in ULIRG 17208-0014	20, 90 One phased, one single w/AW609,AT292	24, 25	20.0
BR085	Reid, M. Carilli, C. Menten, K. Wilner, D.	CfA NRAO-Socorro MPIFR CfA	HC3N temperature in the z=0.89 molecular cloud in 1830-211	1.3, 2 Phased array VLBI	2,3	16.0
BR088	Ratner, M.I. Bartel, N. Bietenholz, M.F. Lebach, D.E. Lestrade, J-F. Ransom, R.R. Shapiro, I.I.	CfA York York CfA Meudon York CfA	Astrometry of HR 8703 in 2003 for gravity probe-B mission	3.6 Phased array VLBI	18	12.0
BT069	Taylor, G. Berger, E. Frail, D. Kulkarni, S.	NRAO-Socorro Caltech NRAO-Socorro Caltech	GRB 030329	2, 3.6, 6	19	3.0

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
	Staff	NRAO	Baselines, Pointing, Delays			38.1
			Maintenance			45.3
			Move/Operations			39.4
			Polarization Calibrator Monitoring			12.0
			Software			30.9
			General tests			58.6

The average downtime was 6.4%.

The array was scheduled for 100% (746.1 hours)  
 533.7 hours (71.5% of time) for astronomical programs  
 136.2 hours (18.2% of time) for tests/calibration  
 76.2 hours (10.2% of time) for maintenance  
 Total 746.1 hours (100.0%) scheduled.

Array was in the D configuration from May 1 through May 12  
 Array was in the A configuration from May 12 through May 31  
 The following independent proposals shared simultaneous observing time  
 (38.9 hours total simultaneous observing):

Projects	Hours
AL586/BH102	5.2
AM756/BG129	4.2
AM766/BH102	1.6
A0172/GP036	6.3
AT286/BH102	0.6
AT292/BM186	3.0
AT292/GP036	2.8
AW607/GP036	1.0
AW609/BM186	7.0
Move/BH102	2.6
Test/BH102	1.5
Test/BH102	2.0
Test/BH102	1.1

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AB1059	Bastian, T.S. Gary, D.E. Lee, J.W. Benz, A.O. Vilmer, N. Klein, K.-L.	NRAO-CV New Jersey Tech Arizona ETH Paris Paris	Joint microwave and hard x-ray imaging of impulsive solar flares	0.7, 1.3, 2 w/BH102	13, 28	16.0
AB1068	Butt, Y. Dame, T. Yusef-Zadeh, F.	Cfa Cfa Northwestern	Tracing cosmic ray sources with OH masers	18	29	2.0
AB1073	Bontemps, S. Motte, F. Schneider, N. Herpin, F. Minier, V.	Bordeaux Caltech Bordeaux Bordeaux New South Wales	Massive star formation sites in Cyg X	3.6, 6	27	6.0
AB1075	Butt, Y. Rupen, M.P. Benaglia, P.	Cfa NRAO-Socorro NRAO/LaPlata (Arg)	VLA Mosaic of Cyg OB2 and unidentified source TeV J2032+4130	6, 20	29	8.0
AC664	Crapsi, A. Caselli, P. Tafalla, M. Walmsley, M.	Firenze Firenze OAN Firenze	Unveiling the temperature structure of a protstellar core	1.3	3	10.0
AC665	Chyzy, K.T. Bomans, D. Klein, U. Urbanik, M.	Jagiellonian Bochum Bonn Univ. Jagiellonian	Magnetic fields in blue compact galaxy IC10	3.6 w/BG129	11,12,29	16.0
AC671	Carilli, C. Walter, F. Fan, X. Bertoldi, F. Cox, P. Beelen, A. Strauss, M. Petric, A.	NRAO-Socorro NRAO-Socorro Princeton MPIFR IAP-Paris IAP-Paris Princeton Columbia	CO(3-2) in QSO J1148+5251 at z=6.37	0.7	7,17,27-29	14.8
AD474	Disney, M.J. de Blok, W.J.G. Minchin, R.F. Boyce, P.J. Dalcanton, J. Ekers, R. Garcia, D.A. Grossi, M. Kilborn, V.A. Knezek, P.M. Linder, S.M. Stavelly-Smith, L. West, A.A.	Cardiff ATNF Cardiff Bristol Washington ATNF Cardiff Cardiff Jodrell Bank Johns Hopkins Cardiff ATNF Washington	HI sources without optical counterparts, from HIPASS	20 line	10, 15, 17	9.6
AG640	Gomez, J.F. deGregorio-Monsalvo, Kuiper, T. Torrelles, J.M. Anglada, G.	IAA IAA JPL IEEC-Barcelona IAA	CCS observations of class 0 protostars	1.3 line	4	10.5
AH811	Helfand, D.J. Becker, R.H. White, R.L. Warwick, R.	Columbia Calif.-Davis STScI Leicester	A multi-wavelength image of Milky Way	20	19, 20, 22	18.5
AJ302	Jonker, P. Fender, R. Dubus, G. Dhawan, V. Rupen, M.	Cambridge Amsterdam IAP, Paris NRAO-Socorro NRAO-Socorro	X-ray transient XTE J1908+094	3.6	12,16	6.0
AK509	Kulkarni, S.K. Frail, D. Galama, T.J. Bloom, J.S. Berger, E. Harrison, F.A.	Caltech NRAO-Socorro Caltech Caltech Caltech Caltech	Radio afterglows from gamma ray bursts	w/BH102, BM185	1,2,5,7,10,13,14,16,19-21,23,26,28,29	28.6
AK550	Kulkarni, S.R. Berger, E. Soderberg, A.M. Chevalier, R.A.	Caltech Caltech Caltech Virginia	Type Ibc supernovae	1.3, 3.6, 6, 20	10, 25	2.0
AK559	Kurtz, S. Fields, D. Thinniam, R. Ayala, S.	UNAM Roane State INAOE UNAM	Extended emission around UC HII regions	3.6	5	4.5

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AK562	Krause, O. Bally, J. Toth, L.V.	MPIA Colorado MPIA	Ammonia (1,1) and (2,2) in massive star forming region IRAS04186+5143	1.3 line	19	8.0
AL586	Lockman, F.J. Rupen, M.P. Liszt, H.	NRAO-GB NRAO-Socorro NRAO-CV	Structure and shape of newly discovered halo HI clouds	20 line w/BH102	1, 3, 4, 6	21.5
AL587	Lang, C.C. Lazio, J.	Iowa NRL	Higher frequency mosaic of the galactic center	6	6, 30	9.0
AM748	Menten, K.M. Reid, M.J. Beuther, H.	MPIfr CfA MPIfr	Sensitive search for SiO masers in star-forming regions	0.7 line	14, 14, 22	26.0
AM755	Matthews, B. Heiles, C.	Calif., Berkeley Calif., Berkeley	OH in the Orion A integral filament	20 line	1	1.0
AM775	Mirabel, I.F. Ribo, M. Marti, J.	Saclay Barcelona U. Jaen	GRS 1915+105 observation with INTEGRAL	w/BH102	1-3,18	5.0
AO170	O'Dea, C. Guerra, E. Daly, R. Donahue, M.	STScI Rowan Penn State STScI	Propagation of powerful radio galaxies	6	11	2.0
AO173	Owen, F. Dwarakanath, K.S. Ledlow, M.	NRAO-Socorro NRAO Gemini	HI in FR I radio galaxy B2 1108+27	20 line	14	3.0
AR503	Rodriguez, L.F. Garay, G.	UNAM Chile	Search for circumstellar disks around massive O-type protostars	0.7	25	4.0
AR505	Ratay, D.L. Gottesman, S.T.	Florida Florida	HI Observations of barred, flocculent galaxies	20	27, 28, 29	15.0
AR508	Rupen, M.P. Mioduszewski, A.J. Dhawan, V. Ribo, M.	NRAO-Socorro NRAO-Socorro NRAO-Socorro Barcelona	Galactic x-ray binaries	20	3,6,8,9,10,1 8,20,21,23,2 6	16.6
AR510	Robshaw, T. Simon, J. Blitz, L.	Calif.-Berkeley Calif.-Berkeley Calif.-Berkeley	A possible interaction between LGC 3 and neighboring HVC	20 line w/BH102, BM185	18, 22, 26	24.0
AR511	Rector, T. Londish, D.	NRAO-Socorro Sydney	Radio quiet BL lac objects?	6	20	17.9
AS745	Solomon, P. Vanden Bout, P. Carilli, C.	SUNY NRAO-CV NRAO-Socorro	Dense molecular gas and star formation in high redshift galaxies	1.3 line w/BM185	1, 3, 30	12.0
AS749	Sollins, P.K. Ho, P.T.P. Zhang, Q. Keto, E.	CfA CfA CfA CfA	Searching for infall in hot molecular cores	1.3 line	28	4.0
AS750	Schinnerer, E. Mundell, C. Garcia-Burillo, S. Combes, F. Ulvestad, J.	NRAO-Socorro John Moores Liverpool Paris Obs. NRAO-Socorro	HI in a CO selected galaxy sample	20 line	23	14.0
AS751	Shirley, Y.L. Wootten, A.	NRAO-Socorro NRAO-CV	Ammonia thermometry of low mass star forming cores	1.3 line	16	12.0
AS754	Stoche, J.T. Rosenberg, J.L. Shull, J.M. Keeney, B.	Colorado Colorado Colorado CfA	HI mapping of galaxies near bright AGNs	20 line	22, 24, 26	33.5
AS758	Shepherd, D. Claussen, M. Kurtz, S.	NRAO-Socorro NRAO-Socorro UNAM	Tracing a circumbinary disk around massive protostar G192.16-3.82	1.3 line w/BM185	14, 25	12.5
AS762	Sokoloski, J.L. Mioduszewski, A. Brocksopp, C. Rupen, M.	Southampton NRAO-Socorro MSSL NRAO-Socorro	Monitoring symbiotic binaries during outburst	3.6, 6, 20	11	2.0
AT285	Thornley, M. Kennicutt, R. Kewley, L. Regan, M. Walter, F.	NRAO Arizona CfA STScI NRAO-Socorro	HI in galaxies in the SIRTIF Nearby Galaxies Survey	20 line	27	3.0
AT286	Thornley, M. Kennicutt, R. Kewley, L. Helou, G.	NRAO Arizona CfA IPAC	Radio-FIR relation on kpc scales in SIRTIF Nearby Galaxy Survey	20	25	2.5
AV261	VanTrung, D. Lim, J.	Academia Sinica Academia Sinica	Cyanopolyynes in carbon-rich envelopes	0.7, 1.3 line w/BG129	10, 12, 13	26.0

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AV265	Vogt, C. Clarke, T. Ensslin, T.	MPIFA Virginia MPIFR	Faraday rotation measure of extended radio sources	6	11, 19, 21	16.5
AW599	Whysong, D. Antonucci, R. Geller, R.	Calif.-Santa Barbara Calif.-Santa Barbara Calif.-Santa Barbara	Search for Thompson scattering in the intergalactic medium	20 w/BH102, BM185	10, 11, 17, 25	32.0
AW601	Wilcots, E.M. Pisano, D.J. Freeland, E.	Wisconsin ATNF Wisconsin	The dynamical evolution of galaxy groups	20 line	4, 6	15.0
AW602	Wilkin, F.P. Loinard, L.	UNAM UNAM	SiO in the NGC 1333 IRAS 2A protostellar outflow	0.7 line w/Pointing	5,6	11.3
AZ143	Zhao, J.-H. Herrnstein, R.M. Goss, M. Bower, G. Pegg, J.	CfA CfA NRAO-Socorro Calif.-Berkeley Harvard University	Monitoring quasi-periodic oscillations of SgrA*	0.7, 1.3, 2	16	2.0
BC132	Carilli, C. Petric, A.	NRAO-Socorro Columbia	Separating AGN and starburst activity in two FIR luminous QSOs	20 Phased array VLBI	15, 18	14.0
BG129	Greenhill, L.J. Chandler, C.J. Reid, M.J. Moran, J.M. Diamond, P.J.	CfA NRAO-Socorro CfA CfA Jodrell Bank	SiO proper motions in Orion KL	0.7 Single antenna VLBI w/AC665, AV261	12	6.1
BH102	Hoffman, I. Goss, M. Brogan, C. Claussen, M.	UNM/NRAO NRAO-Socorro NRAO-Socorro NRAO-Socorro	Full Stokes observations of the W44 OH(1720 MHz) masers	20 line Single antenna VLBI w/AK509, AL586, AB1059, AW599, AM775, AR510	13, 18	14.7
BM176	Momjian, E. Romney, J.D. Carilli, C.L. Troland, T.H.	Kentucky/NRAO NRAO-Socorro NRAO-Socorro Kentucky	VLBA continuum and HI absorption observations of LIG UGC 2369	20 Phased array VLBI	1	10.0
BM185	Murgia, M. Dallacasa, D. Stanghellini, C. Fanti, R.	Bologna Bologna Noto Bologna	Spectral versus kinematic age in CSOs	2, 3.6, 6, 20 Single antenna VLB w/AS758, AW599, AR510, AK509, AS754	25, 26	14.7
BP103	Perez-Torres, M.A. Mantovani, F. Marcaide, J.M. Guirado, J.C. Alberdi, A. Lara, L. Ros, E. Panagia, N. Shapiro, I. Sramek, R. Stockdale, C. Weiler, K. Van Dyk, S. Lundqvist, P.	Bologna Bologna Valencia Valencia IAA Granada MPIFR STScI CfA NRAO-Socorro NRL NRL IPAC Stockholm	SN 2001 gd in NGC 5033	2 Phased array VLBI	7	7.9
	Staff	NRAO	Baselines, Pointing, Delays Maintenance Polarization Calibrator Monitoring Planned power outage Software Student observation General tests		5  11	62.9 53.1 12.5 9.4 35.7 2.5 25.1

April

The average downtime was 7.4%.

The array was scheduled for 100% (722.0 hours)  
534.0 hours (74.0% of time) for astronomical programs  
99.3 hours (13.7% of time) for tests/calibration  
88.7 hours (12.3% of time) for maintenance  
Total 722.0 hours (100.0%) scheduled.

Array was in the D configuration from April 1 through April 30  
The following independent proposals shared simultaneous observing time  
(36.9 hours total simultaneous observing):

Projects	Hours
AB1059/BH102	1.0
AC665/BG129	3.8
AK509/BH102	0.9
AK509/BM185	2.0
AL586/BH102	5.5
AM775/BH102	2.0
AR510/BH102	0.9
AR510/BM185	5.0
AS758/BM185	3.5
AV261/BG129	2.3
AW599/BH102	4.5
AW599/BM185	4.2
Pointing/AW602	1.3

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AA267	Alexander, P. Riley, J. Pooley, G.G. Fabian, A.C. Hardcastle, M. Worrall, D. Cotter, G. Inskip, K. Allen, S. Crawford, C.	Cambridge MRAO Cambridge Cambridge Bristol Bristol Cambridge Cambridge Cambridge Cambridge	Formation of cold clouds by FR II radio sources	2	7, 17	3.5
AB1039	Bignall, H. Jauncey, D. Lovell, J. Kedziora-Chudczer, L Tzioumis, T. Macquart, J-P.	Adelaide ATNF ATNF ATNF ATNF Groningen	ISM properties towards the Intraday variable PKS 1257-326	3.6 w/BH102	5, 6	12.2
AB1066	Beck, R. Frick, P. Patrickeyev, I.	MPIFR ICMM, Russia ICMM, Russia	Magnetic phenomena in the spiral galaxy IC 342	3.6, 6	1	12.0
AB1069	Beswick, R. Pedlar, A. Muxlow, T. Wills, K. Gallimore, J. Strong, M.	Jodrell Bank Jodrell Bank Jodrell Bank Sheffield U. Bucknell Jodrell Bank	HI emission and absorption in starburst galaxies	20 line	2, 3	20.0
AB1074	Bolatto, A. Walter, F. Simon, J. Mihos, C. Robishaw, T.	Calif.-Berkeley NRAO-Socorro Calif.-Berkeley Case Western Res. Calif.-Berkeley	Extended atomic hydrogen in the Leo triplet	20 line w/BB138	28, 30	18.6
AB1080	Bower, G. Plambeck, R. Bolatto, A.	Calif.-Berkeley Calif.-Berkeley Calif.-Berkeley	ToO: flaring object in Orion		16, 24, 29	9.8
AC664	Crapsi, A. Caselli, P. Tafalla, M. Walmsley, M.	Arcetri Arcetri OAN Arcetri	Ammonia thermometry of prestellar core L1544	1.3 line	8	20.0
AC666	Choi, M. Ho, P.T.P. Takakuwa, S.	Academia Sinica CfA CfA	Density structure of the inner envelope of Class 0 protostars	0.7	30	5.0
AC667	Chyzy, K.T. Vollmer, B. Bomans, D. Beck, R. Urbanik, M.	Jagiellonian MPIFR Bochum MPIFR Jagiellonian	NGC 4569 - a galaxy caught in a stripping process?	6, 20	12	8.0
AC671	Carilli, C. Walter, F. Fan, X. Bertoldi, F. Cox, P. Beelen, A. Strauss, M. Petric, A.	NRAO-Socorro NRAO-Socorro Princeton MPIFR IAP-Paris IAP-Paris Princeton Columbia	CO(3-2) in QSO J1148+5251 at z=6.37	0.7 w/BB138	16,17,29,31	10.4
AD473	Dunn, D. dePater, I. Molnar, L.	Calif., Berkeley Calif-Berkeley Calvin College	Observations of Saturn's Rings at large opening angles	0.7, 1.3	14, 15	24.0
AD474	Disney, M.J. de Blok, W.J.G. Minchin, R.F. Boyce, P.J. Dalcanton, J. Ekers, R. Garcia, D.A. Grossi, M. Kilborn, V.A. Knezek, P.M. Linder, S.M. Stavelly-Smith, L. West, A.A.	Cardiff ATNF Cardiff Bristol Washington Washington ATNF Cardiff Cardiff Jodrell Bank Johns Hopkins Cardiff ATNF Washinton	HI sources without optical counterparts, from HIPASS	20 line	25	11.0

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AD475	Disney, M.J. de Blok, W.J.G. Minchin, R.F. Boyce, P.J. Dalcanton, J. Eales, S.A. Ekers, R.D. Garcia, D.A. Grossi, M. Kilborn, V.A. Knezek, P.M. Ryder, S.D. Staveley-Smith, L. Vlahakis, C.E. West, A.A.	Cardiff ATNF Cardiff Bristol Washington Cardiff ATNF Cardiff Cardiff Jodrell Bank Johns Hopkins AAO ATNF Cardiff Washington	Hydrogen-giant galaxies found in HIPASS	20 line	29	11.0
AE150	Estalella, R. Palau, A.	Barcelona Barcelona	Protostars in IRAS 20028+2903	0.7, 1.3	25	1.0
AG639	Govoni, F. Markevitch, M. Feretti, L. Giovannini, G.	Bologna Cfa Bologna Bologna	Radio halos in merging and non-merging galaxy clusters	20 w/BG129	9, 10	18.0
AH804	Henkel, C. Carilli, C. Menten, K. Wootten, A.H.	MPIfR NRAO-Socorro MPIfR NRAO-Socorro	Deuterium abundance in a molecular cloud at z = 0.9	0.7	16	3.5
AI104	Iverson, R.J. Greve, T.R. Carilli, C.L. Papadopoulos, P. Lewis, G.F.	ROE Edinburgh NRAO-Socorro Leiden AAO	Mapping high-z gas-rich mergers via 12CO J=1-0	0.7, 1.3	1,9	10.5
AJ302	Jonker, P. Fender, R. Dubus, G. Dhawan, V. Rupen, M.	Cambridge Amsterdam IAP NRAO-Socorro NRAO-Socorro	X-ray transient XTE J1908+094	3.6	25	4.0
AK504	Kulkarni, S. Diercks, A. Frail, D.A. Galama, T.J. Kaplan, D.L. Rupen, M.	Caltech Caltech NRAO-Socorro Caltech Caltech NRAO-Socorro	Prompt observations and monitoring of SNe with suspect central engines	2, 3.5, 6, 20	26	0.5
AK509	Kulkarni, S.K. Frail, D. Galama, T.J. Bloom, J.S. Berger, E. Harrison, F.A.	Caltech NRAO-Socorro Caltech Caltech Caltech Caltech	Radio afterglows from gamma ray bursts	w/BH97, BH102	1-3,5-8,10,1 3-18,20-25,2 7-31	41.4
AK533	Kempner, J. Sarazin, C. Rudnick, L.	Virginia Virginia Minnesota	Cluster radio relics discovered in WENSS	20, 90	24	3.0
AK550	Kulkarni, S.R. Berger, E. Soderberg, A.M. Chevalier, R.A.	Caltech Caltech Caltech Virginia	Type Ibc supernovae	1.3, 3.6, 6, 20	1,3,8,9,14,1 7,19,22	10.5
AK557	Kothes, R. Landecker, T.	DRAO DRAO	HI absorption in four supernova remnants for kinematic distances	20 line w/BH102	9, 27	10.5
AL586	Lockman, F.J. Rupen, M.P. Liszt, H.	NRAO-GB NRAO-Socorro NRAO-CV	Structure and shape of newly discovered halo HI clouds	20 line w/BB138	29, 31	11.6
AL587	Lang, C.C. Lazio, J.	Iowa NRL	Higher frequency mosaic of the galactic center	6	2-4,10,14,21 23	35.0
AM727	Monnier, J.D. Greenhill, L.J. Tuthill, P.G. Danchi, W.C.	Cfa Cfa Sydney NASA/GSFC	Colliding wind binary WR 112	3.6	17	1.0
AM744	Mirabel, I.F. Ribo, M. Marti, J.	Saclay Barcelona U. Jaen	Simultaneous observations with the INTEGRAL galactic plane survey	2, 3.6, 6, 20 w/BH97	13, 24	12.0



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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AM746	Murgia, M. Parma, P. Fanti, R. de Ruiter, H. Bondi, M. Ekers, R. Fomalont, E.	Bologna Bologna Bologna Bologna ATNF NRAO-CV	High-frequency observations of the radio galaxy NGC 326	2	2	9.0
AM749	Moscadelli, L. Furuya, R. Claussen, M. Kitamura, Y. Testi, L. Wootten, A.	Cagliari Arcetri NRAO-Socorro ISAS Arcetri NRAO-CV	Low mass YSOs explored by H2O masers	1.3 line w/BH102	6, 13	5.0
AM752	Mueller, K.E. Evans II, N.J. Shirley, Y.	University of Texas, University of Texas, NRAO-Socorro	Probing cold, dense gas towards pre-protostellar cores with formaldehyde	6	6	10.0
AM756	Mundy, L. Henning, T. Wilner, D. Chandler, C.	Maryland MPIA CfA NRAO-Socorro	Dust properties in T Tauri systems: VLA 7mm observations	0.7, 1.3	17, 21, 22, 23	32.0
AM758	van Moorsel, G.	NRAO-Socorro	HI in NGC2403	20 line	19	2.0
AP450	Partridge, B. Guerra, E. Cabanela, J.E. Myers, S.T.	Haverford Rowan Haverford NRAO-Socorro	Spectra of inverted spectrum radio sources from 4.8 GHz to 43 GHz	0.7, 1.3, 3.6, 6 w/BG129	2, 9, 10, 15	9.0
AQ015	Qi, C. Zhang, Q. Wilner, D. Blake, G.	CfA CfA CfA Caltech	Dust grain growth in protoplanetary disks	0.7, 3.6	31	8.0
AR508	Rupen, M.P. Mioduszewski, A.J. Dhawan, V. Ribo, M.	NRAO-Socorro NRAO-Socorro NRAO-Socorro Barcelona	Galactic x-ray binaries	20  w/BG129	3,5,7,10,14, 17,18,22,25, 30	16.0
AS745	Solomon, P. Vanden Bout, P. Carilli, C.	SUNY NRAO-CV NRAO-Socorro	Dense molecular gas and star formation in high redshift galaxies	1.3 line 14.9	3,10,16,31	10.5
AS748	Spoon, H. van der Hulst, T. Evans, A. Klockner, H-R. Boomsma, R.	Kapteyn Groningen Keele Groningen Kapteyn	Search for an HI bridge between NGC 4418 & VV 655	20 line	20	7.0
AS750	Schinnerer, E. Mundell, C. Garcia-Burillo, S. Combes, F. Ulvestad, J.	NRAO-Socorro John Moores Liverpool Paris Obs. NRAO-Socorro	HI in a CO selected galaxy sample	20 line	18, 21, 24	33.0
AS751	Shirley, Y.L. Wootten, A.	NRAO-Socorro NRAO-CV	Ammonia thermometry of low mass star forming cores	1.3 line	7	12.0
AS753	Sewilo, M. Churchwell, E. Goss, M. Kurtz, S. Hofner, P.	Wisconsin Wisconsin NRAO-Socorro UNAM Puerto Rico	Broad radio recombination lines in ultracompact HII regions	0.7 line	20	10.0
AS755	Stanimirovic, S. Salter, C. Urošević, D.	Arecibo Arecibo Belgrade	Possible interaction between SNR G42.8+0.6 and a molecular cloud	20 line	18	6.0
AS758	Shepherd, D. Claussen, M. Kurtz, S.	NRAO-Socorro NRAO-Socorro UNAM	Tracing a circumbinary disk around massive protostar G192.16-3.82	1.3 line	4	7.0
AT285	Thornley, M. Kennicutt, R. Kewley, L. Regan, M. Walter, F.	Bucknell Arizona CfA STScI NRAO-Socorro	HI in galaxies in the SIRTIF Nearby Galaxies Survey	20 line	26	3.0
AT287	Trung, D.V. Lim, J.	Academica Sinica Academia Sinica	Equatorial disk and central torus of the Egg nebula	0.7, 1.3 line w/BH102	6	3.0
AU093	Umana, G. Trigilio, C. Cerrigone, L.	Noto Noto Catania	Radio characteristics of young planetary nebulae	1.3, 2, 6, 20	8,20	8.9

VLA Utilization Report March 2003

Progrm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AW593	Weiler, K.W. Stockdale, C. Sramek, R.A. Van Dyk, S.D. Panagia, N. Marcaide, J.M. Lewin, W.H.G. Pooley, D. Immler, S.	NRL NRL NRAO-Socorro IPAC STSci Valencia MIT MIT Massachusetts	ToO observations of Supernovae	1.3, 2, 3.6, 6, 20, 90	17	1.0
AW596	Willson, R.F.	Tufts	VLA-RHESSI investigations of solar flares and microflares	1.3, 2, 3.6	16, 28, 29, 30	19.9
AW597	Wilson, T. Martin-Pintado, J. Chandler, C.	MPIFR OAN NRAO-Socorro	Thermal SiO emission from the HII region/molecular cloud interface	0.7 line	15	7.0
AW601	Wilcots, E.M. Pisano, D.J. Freeland, E.	Wisconsin ATNF	The dynamical evolution of galaxy groups	20 line	13,16	12.0
AY138	Yusef-Zadeh, F. Roberts, D.A. Wardle, M.	Northwestern Brandeis Macquarie	Search for OH toward supernova remnants	20 line	28	6.3
AZ143	Zhao, J.-H. Herrnstein, R.M. Goss, M. Bower, G. Pegg, J.	CfA CfA NRAO-Socorro Calif.-Berkeley Harvard University	Monitoring quasi-periodic oscillations of SgrA*	0.7, 1.3, 2 w/BL113	17	2.0
BB138	Bach, U. Krichbaum, T.P. Alef, W. Witzel, A. Zensus, J.A.	MPIFR MPIFR MPIFR MPIFR MPIFR	Motion in the counter jet of Cygnus A	2, 6 Single antenna VLBI w/AB1074,AC671,AL586	30	7.2
BG129	Greenhill, L.J. Chandler, C.J. Diamond, P.J. Moran, J.M. Reid, M.J.	CfA NRAO-Socorro Jodrell Bank CfA CfA	Sio Maser proper motions in Orion KL	0.7 w/software,	10 AR508,AP450,AG639	6.1
BG134	Greenhill, L.J. Kondratko, P.T. Lovell, J.E.J. Kuiper, T.B.H. Moran, J.M. Jauncey, D.L.	CfA Harvard ATNF JPL CfA ATNF	Follow-up imaging of water megamasers detected with the DSN	1.3 Phased array VLBI	27	13.2
BH097	Hoffman, I. Brogan, C. Claussen, M. Goss, M.	NRAO-Socorro NRAO-Socorro NRAO-Socorro NRAO-Socorro	Full stokes observations of the 1720 MHz OH masers in W28	20 Single antenna VLBI w/AK509,AM744	24	5.1
BH102	Hoffman, I. Goss, M. Brogan, C. Claussen, M.	NRAO-Socorro NRAO-Socorro NRAO-Socorro NRAO-Socorro	Full stokes observations of the W44 OH(1720 MHz) masers	20 Single antenna VLBI w/AB1039,AM749,AK509,AK557,te st	6, 27	12.6
BL113	Lazio, J. Chatterjee, S. Cordes, J. Kramer, M.	NRL Cornell Cornell Jodrell Bank	B1849+005 and PSR B1849+00: a scattering comparison	20 Single antenna VLBI w/AZ143	17	3.1
	Staff	NRAO	Baselines, Pointing, Delays Maintenance Polarization Calibrator Monitoring Software Student observation General tests		1, 9, 10, 31	38.2 47.6 13.0 31.4 8.5 42.0

The average downtime was 3.2%.

The array was scheduled for 100% (746.1 hours)  
579.6 hours (77.7% of time) for astronomical programs  
88.0 hours (11.8% of time) for tests/calibration  
78.4 hours (10.5% of time) for maintenance  
Total 746.0 hours (100.0%) scheduled.

Array was in the D configuration from March 1 through March 31  
The following independent proposals shared simultaneous observing time  
(34.2 hours total simultaneous observing):

Projects	Hours
AB1039/BH102	1.8
AB1074/BB138	3.9
AC671/BB138	0.7
AG639/BG129	1.5
AK509/BH102	0.4
AK509/BH97	0.6
AK557/BH102	3.4
AL586/BB138	2.6
AM727/BL113	1.0
AM744/BH97	4.5
AM749/BH102	3.0
AP450/BG129	2.5
AR508/BG129	1.0
AT287/BH102	2.6
AW593/BL113	0.5
AZ143/BL113	1.6
Software/BG129	1.1
Test/BH102	1.5

## VLA Utilization Report February 2003

Progrm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AA281	Axon, D. Gallimore, J.F. Pedlar, A. Baum, S.A.	Hertfordshire Bucknell Jodrell Bank STScI	Radio relics of Seyfert Galaxies	6	20,27	13.1
AB1066	Beck, R. Frick, P. Patrickeyev, I.	MPIfR ICMM, Russia ICMM, Russia	Magnetic phenomena in the spiral galaxy IC 342	3.6, 6 w/move/op	24, 28	24.0
AB1076	Brogan, C. Vastel, C. Wannier, P.	NRAO-Socorro Caltech JPL	HI synthesis observations toward W31C	20 line	3,10	11.5
AB1077	Brogan, C. Kassim, N. Lazio, J.	NRAO-Socorro NRL NRL	Low frequency observations of the W51 complex	90	8	6.0
AB1080	Bower, G. Plambeck, R. Bolatto, A.	Calif.-Berkeley Calif.-Berkeley Calif.-Berkeley	ToO: flaring object in Orion		1,2,4-6,10,1 3,16,21,23,2 5,27	19.0
AC665	Chyzy, K.T. Bomans, D. Klein, U. Urbanik, M.	Jagiellonian Bochum Bonn Univ. Jagiellonian	Magnetic fields in blue compact galaxy IC10	3.6 w/BG129	9, 14	20.0
AC668	Contreras, M.E. Rodriguez, L.F. Wilkin, F.P.	UNAM UNAM UNAM	Interacting winds in O-type binary stars	3.6	10	1.5
AC669	Castelletti, G. Brogan, C. Dubner, G. Kassim, N.	IAFE NRAO-Socorro IAFE NRL	VLA Obs. toward the W44	90, 400	27	7.0
AD438	Dennett-Thorpse, J. de Bruyn, A.G.	Kapteyn Kapteyn	Determination of structure of microarcsecond sources	1.3, 3.6, 6	8, 18	3.0
AF394	Fuente, A. Testi, L. Natta, A. Rodriguez-Franco, A.	Yebes Arcetri Arcetri OAN	Continuum emission towards HBe stars	0.7, 1.3	18, 20	11.8
AG626	Gaensler, B. Lazio, J. Brogan, C. Kassim, N.	Cfa NRL NRAO-Socorro NRL	90 cm survey of the inner galaxy	90 w/BH97	23, 24	16.0
AG641	Gaensler, B. Brogan, C. Kassim, N. Lazio, J. Gelfand, J.	Cfa NRAO-Socorro NRL NRL Cfa	90 cm survey of inner galaxy	90	23, 24	16.0
AG643	Giacani, E. Dubner, G. Reynoso, E. Goss, M. Green, A. Johnston, S.	IAFE IAFE IAFE NRAO-Socorro Sydney University Sydney University	Neutral gas around peculiar neutron stars	20 line	13, 17	8.0
AG644	Glikman, E. Helfand, D.J.	Columbia Columbia	Do all red quasars have flat radio spectra?	3.6, 20	9, 16, 18, 22	10.5
AG645	Greene, J. Lim, J. Ho, P.T.P.	Cfa Academia Sinica Cfa	HI imaging of Seyfert galaxies	20 line	18, 20, 23	23.0
AH804	Henkel, C. Carilli, C. Menten, K. Wootten, H.A.	MPIfR NRAO-Socorro MPIfR NRAO-CV	Deuterated hydrogen cyanide in the z=0.9 molecular cloud in PKS 1830-211	0.7 line	28	7.0
AH807	Herrnstein, R.M. Montero-Castano, M. Ho, P.T.P.	Cfa Complutense Cfa	Search for high velocity ammonia near Sagittarius A*	1.3 line	2	5.0
AH808	Ho, P.T.P. Greene, J.E. Herrnstein, R.M.	Cfa Cfa Cfa	Ammonia (6,6) in nuclei of galaxies	1.3 line	15	12.0
AH809	Han, J.L. You, X.P. Men, H. Zhao, J.H.	NAO NAO NAO Cfa	Probe cosmological magnetic field by a RM survey at galactic poles	20	3	5.5
AI104	Iverson, R.J. Greve, T.R. Carilli, C.L. Papadopoulos, P. Lewis, G.F.	ROE Edinburgh NRAO-Socorro Leiden AAO	Mapping high-z gas-rich mergers via 12CO J=1-0	0.7, 1.3	21	5.0

## VLA Utilization Report February 2003

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AK509	Kulkarni, S.K. Frail, D. Galama, T.J. Bloom, J.S. Berger, E. Harrison, F.A.	Caltech NRAO-Socorro Caltech Caltech Caltech	Radio afterglows from gamma ray bursts		2,4,9,10,13, 15,17,18,20, 21,23-26	23.6
AK550	Kulkarni, S.R. Berger, E. Soderberg, A.M. Chevalier, R.A.	Caltech Caltech Caltech Virginia	Type Ibc supernovae	1.3, 3.6, 6, 20	1-3,6-9,11,1 4,22	11.0
AK560	Keto, E.	Cfa	Continuing accretion in massive star formation	0.7, 1.3 line	1	8.0
AL587	Lang, C.C. Lazio, T.J.W.	Iowa NRL	Higher frequency mosaic of the galactic center	6	9, 25	10.0
AM727	Monnier, J.D. Greenhill, L.J. Tuthill, P.G. Danchi, W.C.	Cfa Cfa Sydney NASA/GSFC	Colliding wind binary WR 112	3.6	22	1.1
AM743	Machalski, J. Jamrozny, M.	Jagiellonian Bonn University	Mapping of radio lobes in giant sources	6	20, 25	6.5
AM744	Mirabel, I.F. Ribo, M. Marti, J.	Saclay Barcelona U. Jaen	Simultaneous observations with the INTEGRAL galactic plane survey	2, 3.6, 6, 20	10	2.0
AM746	Murgia, M. Parma, P. Fanti, R. de Ruiter, H. Bondi, M. Ekers, R. Fomalont, E.	Bologna Bologna Bologna Bologna ATNF NRAO-CV	High-frequency observations of the radio galaxy NGC 326	2	17	9.0
AM747	Murgia, M. Parma, P. Mack, K-H. de Ruiter, H. Fanti, R.	Bologna Bologna ASTRON Bologna Bologna	Relic radio galaxies	3.6, 6	19, 23	5.5
AM753	Minchin, R.F. Disney, M.J. de Blok, W.J.G. Grossi, M. Garcia, D.A.	Cardiff Cardiff ATNF Cardiff Cardiff	Identification of sources found in the HIDEEP survey	20 line	1, 2, 3	13.0
AM761	Menten, K.	MPIFR	Search for Aminoacetonitrile	3.6 line	19	1.5
AP450	Partridge, B. Guerra, E. Cabanela, J.E. Myers, S.T.	Haverford Rowan Haverford NRAO-Socorro	Spectra of inverted spectrum radio sources from 4.8 GHz to 43 GHz	0.7, 1.3, 3.6, 6	1, 6, 20, 21, 27	10.9
AR504	Rudnick, L. Rottgering, H. Wilman, R. Rawlings, S. Brand, K. Blundell, K.	Minnesota Leiden Leiden Oxford Oxford Oxford	Survey for highly extended extragalactic structures	90	13, 17	15.0
AR508	Rupen, M.P. Mioduszewski, A.J. Dhawan, V. Ribo, M.	NRAO-Socorro NRAO-Socorro NRAO-Socorro Barcelona	Galactic x-ray binaries	20	5, 6, 13, 20, 22, 26	10.0
AS745	Solomon, P. Vanden Bout, P. Carilli, C.	SUNY NRAO-CV NRAO-Socorro	Dense molecular gas and star formation in high redshift galaxies	1.3 line	23	5.0
AS749	Sollins, P.K. Ho, P.T.P. Zhang, Q. Keto, E.	Cfa Cfa Cfa Cfa	Searching for infall in hot molecular cores	1.3 line	14	3.0
AS750	Schinnerer, E. Mundell, C. Garcia-Burillo, S. Combes, F. Ulvestad, J.	NRAO-Socorro John Moores Liverpool Paris Obs. NRAO-Socorro	HI in a CO selected galaxy sample	20 line	8	6.0
AS752	Schinnerer, E. O'Neil, K.	NRAO-Socorro Arecibo	HI in massive low surface brightness galaxies	20 line	10, 12	16.0

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AS757	Sridharan, T.K. Zhang, Q. Hunter, T. Wyrowski, F. Beuther, H. Schilke, P.	Cfa Cfa Cfa MPIfR MPIfR MPIfR	Dust disks around high mass proto-stars	0.7, 3.6	4	5.5
AT285	Thornley, M. Kennicutt, R. Kewley, L. Regan, M. Walter, F.	Bucknell Arizona Cfa STScI NRAO-Socorro	HI in galaxies in the SIRTIF Nearby Galaxies Survey	20 line	1, 16	4.1
AT286	Thornley, M. Kennicutt, R. Kewley, L. Helou, G.	Bucknell Arizona Cfa IPAC	Radio-FIR relation on kpc scales in SIRTIF Nearby Galaxy Survey	20	1, 2	16.0
AU093	Umana, G. Trigilio, C. Cerrigone, L.	Noto Noto Catania	Radio characteristics of young planetary nebulae	1.3, 2, 6, 20	15, 16	15.9
AW593	Weiler, K.W. Stockdale, C. Sramek, R.A. Van Dyk, S.D. Panagia, N. Marcaide, J.M. Lewin, W.H.G. Pooley, D. Immler, S.	NRL NRL NRAO-Socorro IPAC STScI Valencia MIT MIT Massachusetts	ToO observations of Supernovae	1.3, 2, 3.6, 6, 20, 90	15	1.0
AW598	Wilson, T.L. Gaume, R.A. Boboltz, D.A. Megeath, S.T.	MPIfR USNO USNO Cfa	Imaging ground state SiO emission in W3 high mass starforming region	0.7 line	22	9.0
AW604	Walter, F. Skillman, E.	NRAO-Socorro Minnesota	Systematic search for HI in lowest-mass dwarf spheroidal galaxies	20 line	9, 14, 16	27.0
AZ141	Zhang, X.Z. Jin, C.J. Reich, W. Tian, W.W. Wu, J.H.	NAO China NAO China MPIfR (Bonn) Beiging NAO China	Observations of four new superova remnant candidates	6	18	1.5
AZ143	Zhao, J.-H. Herrnstein, R.M. Goss, M. Bower, G. Pegg, J.	Cfa Cfa NRAO-Socorro Calif.-Berkeley Cfa	Monitoring quasi-periodic oscillations of SgrA*	0.7, 1.3, 2	14	2.0
BG129	Greenhill, L.J. Chandler, C.J. Reid, M.J. Moran, J.M. Diamond, P.J.	Cfa NRAO-Socorro Cfa Cfa Jodrell Bank	SiO proper motions in Orion KL	0.7 Single antenna VLBI w/AC665	9	8.0
BH097	Hoffman, I. Brogan, C. Claussen, M. Goss, M.	NRAO-Socorro NRAO-Socorro NRAO-Socorro NRAO-Socorro	Full Stokes observations of the 1720 MHz OH masers in W28	20 Single antenna VLBI w/AG626	24	5.2
BM176	Momjian, E. Romney, J.D. Carilli, C.L. Troland, T.H.	Kentucky/NRAO NRAO-Socorro NRAO-Socorro Kentucky	VLBA continuum and HI absorption observations of LIG UGC 2369	20 line Phased array VLBI	3	10.0
	Staff	NRAO	Baselines, Pointing, Delays Maintenance Move/Operations Polarization Calibrator Monitoring Software Student observation General tests		27	59.7 42.9 23.3 11.5 27.0 2.0 66.8

The average downtime was 5.3%.

The array was scheduled for 100% (673.9 hours)  
455.2 hours (67.5% of time) for astronomical programs  
148.8 hours (22.1% of time) for tests/calibration  
69.9 hours (10.4% of time) for maintenance  
Total 673.9 hours (100.0%) scheduled.

Array was in the DnC configuration from February 1 through February 3  
Array was in the D configuration from February 3 through February 28

The following independent proposals shared simultaneous observing time  
(16.1 hours total simultaneous observing):

Projects	Hours
AB1066/move/op	5.9
AC665/BG129	5.0
AG626/BH97	5.2

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AB1039	Bignall, H. Jauncey, D. Lovell, J. Kedziora-Chudczer, L Tzioumis, T. Macquart, J-P.	Adelaide ATNF ATNF ATNF ATNF Groningen	ISM properties towards the Intraday variable PKS 1257-326	3.6 w/BH104	9, 10	13.0
AB1057	Bagchi, J.	IUCAA	Diffuse sources in merging cluster Abell 3376	20	24	3.5
AB1059	Bastian, T.S. Gary, D.E. Lee, J.W. Benz, A.O. Vilmer, N. Klein, K.-L.	NRAO-CV NJIT Arizona ETH Paris Paris	Joint microwave and hard x-ray imaging of impulsive solar flares	0.7, 1.3, 2, 3.6, 6	6	8.0
AB1079	Birkinshaw, M.	Bristol	CXO J0841+1311 Jet	3.6	10	1.0
AB1080	Bower, G.A.	Calif., Berkeley	BIMA observations	0.7, 1.3, 3.6	21,23,26,29, 30	5.1
AC624	Clemens, M. Alexander, P. Cotter, G. Longair, M.S. Nikolic, B.	Cambridge Cambridge Cambridge Cambridge Cambridge	Comparison of thermal continuum emission with mid-IR PAH features	2	4	1.5
AC671	Carilli, C. Walter, F.	NRAO-Socorro NRAO-Socorro	Holography at the VLA		16	4.5
AC672	Claussen, M.J. Shirley, Y. Wootten, H.A.	NRAO-Socorr NRAO-Socorro NRAO-CV	Search for water maser and OH masers toward the Orion millimeter flare source	1.3, 18	26	2.0
AD477	Dubner, G. Castelletti, G. Reynoso, E. Goss, M.	IAFE IAFE IAFE NRAO-Socorro	SNR Puppis A	20	21, 22, 23	8.8
AG592	van Gorkom, J. Bravo-Alfaro, H. Dwarakanath, K. Guhathakurta, P. Poggianti, B. Schiminovich, D. Valluri, M. Verheijen, M. Wilcots, E. Zabludoff, A.	Columbia Guanajuato NRAO-Socorro Calif., Santa Cruz Padova Caltech Rutgers Wisconsin Wisconsin Wisconsin	HI survey of clusters in the local universe	20 line	1	6.5
AG644	Glikman, E. Helfand, D.J.	Columbia Columbia	Do all red quasars have flat radio spectra?	3.6, 20	20, 24	10.0
AH787	Harris, D.E. Kim, D.W. Fomalont, E.	Cfa Cfa NRAO-CV	X-ray - radio comparison in Fornax A	0.7, 2	21, 23	10.0
AH792	Hollis, J.M. Pedelty, J.A. Snyder, L.E. Jewell, P.R. Lovas, F.J. Palmer, P. Liu, S.-Y.	NASA-GSFC NASA-GSFC Illinois NRAO-GB Illinois Chicago Caltech	Search for glycine toward Sgr B2(N-LMH)	0.7 line	25, 27, 28, 31	24.0
AH795	Hunter, D. Tomita, A. Sunada, K. Elmegreen, B. Brinks, E.	Lowell Wakayama Nobeyama IBM Guanajuato	Galaxies with CO J=1-0 observations	20 line	4	6.0
AH805	Herrnstein, R. Montero-Castano, M. Ho, P.T.P.	Cfa Madrid Cfa	Ammonia (3,3) and (6,6) in molecular cloud G359.1-0.5	1.3 line	18, 19	12.0
AH806	Holzappel, W. Carlstrom, J. Dawson, K.	Calif., Berkeley Chicago Calif.-Berkeley	Inverted spectrum point sources in CMB anisotropy fields	3.6 w/BH104	7, 9, 13, 19	11.0
AH809	Han, J.L. You, X.P. Men, H. Zhao, J.-H.	NAO NAO NAO Cfa	Probe cosmological magnetic field by a RM survey at galactic poles	20	17, 31	9.0
AI105	Isaak, K. Chandler, C. Carilli, C.	Cambridge NRAO-Socorro NRAO-Socorro	HCN emission from z=4.69 radio quiet quasar BR 1202-0725	2 line	25, 25, 26, 27, 28	34.5
AJ293	Johnson, K. Kobulnicky, C.	NRAO-Socorro Wisconsin	Q-band observations of optically thick free-free sources in He2-10	0.7	4	4.0

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## VLA Utilization Report January 2003

Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AK509	Kulkarni, S.K. Frail, D. Galama, T.J. Bloom, J.S. Berger, E. Harrison, F.A.	Caltech NRAO-Socorro Caltech Caltech Caltech	Radio afterglows from gamma ray bursts	w/BG129	4-7,9,13-15, 17,22,25,28	19.3
AK550	Kulkarni, S. Berger, E. Chevalier, R.A. Soderberg, A.M.	Caltech Caltech Univ. of Virginia Caltech	Supernovae with suspect central engines	1.3,3.5,6, 20	2,19,20,22,2 4,27,28,30	10.5
AK553	Kenney, J. van Gorkom, J. Vollmer, B.	Yale Columbia MPIFR	HI in highly inclined ram pressure stripped spirals in Virgo Cluster	20 line	4, 5	12.0
AK554	Koopmans, L.V.E. deBruyn, A.G. Fassnacht, C.D. Wambsganss, J. Blandford, R.D.	Caltech NFRA STScI Potsdam Caltech	Compact halo objects at z=0.41 via radio microlensing in B1600+434	2, 3.6, 6	5	1.0
AL557	Lovell, J. Bignall, H. Jauncey, D. Tzioumis, A. Kedziora-Chudczer, L. Reynolds, J. Rickett, B. Marcquart, J.-P.	ATNF Adelaide ATNF ATNF ATNF ATNF Calif.-San Diego Groningen	Northern hemisphere intra-day variable survey	3.6, 6	10	72.0
AL584	Lai, S-P. Velusamy, T. Langer, W.	JPL JPL JPL	Pre-protostellar core B68	1.3 line	23	6.5
AM702	Markovic, T. Owen, F. Eilek, J.	NMIMT NRAO-Socorro NMIMT	Radio halos in Abell Clusters of galaxies	20	2, 3	11.0
AM727	Monnier, J.D. Greenhill, L.J. Tuthill, P.G. Danchi, W.C.	CfA CfA Sydney NASA-GSFC	Colliding wind binary WR 112	3.6	5	1.0
AM753	Minchin, R.F. Disney, M.J. de Blok, W.J.G. Grossi, M. Garcia, D.A.	Cardiff Cardiff ATNF Cardiff Cardiff	Identification of sources found in the HIDEEP survey	20 line	14,19-24,30, 31	35.7
AM754	Moffett, D. Reynoso, E. Hughes, J.	Fuhrman IAFE (Buenos Aires) Rutgers	Measuring the expansion of SN 1006	20	24	4.0
A0159	Owen, F. O'Dea, C. van der Marel, R. Laine, S. Postman, M. Lauer, T.	NRAO-Socorro STScI STScI STScI STScI NOAO	Radio sources and black holes in brightest cluster galaxies	20	2	1.0
A0163	Owen, F. Lonsdale, C. Morrison, G. Smith, G. Xu, C.	NRAO-Socorro Caltech Caltech Calif., San Diego Caltech	Very deep radio/SIRTF survey: faint source, radio FIR correlation	20	6	7.0
AP450	Partridge, B. Guerra, E. Cabanela, J.E. Myers, S.T.	Haverford Rowan Haverford NRAO-Socorro	Spectra of inverted spectrum radio sources from 4.8 GHz to 43 GHz	0.7, 1.3, 3.6, 6	31	3.6
AR476	Rupen, M.P. Mioduszewski, A.J. Dhawan, V.	NRAO-Socorro NRAO-Socorro NRAO-Socorro	Galactic X-ray binaries and transients	0.7, 1.3, 2, 3.6, 20, 90	2, 4, 5	4.6
AR477	Rawlings, S. Dunlop, J. Hill, G. Jarvis, M. McLure, R. Mitchell, E. Willott, C.	Oxford ROE McDonald Observatory Leiden Oxford Oxford Oxford	What controls the spread in radio luminosity of massive elliptical galaxies?	3.5,6,20	14	1.5
AR508	Rupen, M.P. Mioduszewski, A.J. Dhawan, V. Ribo, M.	NRAO-Socorro NRAO-Socorro NRAO-Socorro Barcelona	Galactic x-ray binaries	0.7, 1.3, 2, 3.6, 6, 20, 90 w/BH104	7,9,13,16,18 ,19,21,27,28 ,31	19.8

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AR509	Rodriguez-Rico, C.A. Goss, M. Zhao, J-H. Viallefond, F.	UNAM NRAO-Socorro CfA Paris	Hydrogen recombination line H53 at 7mm from starburst galaxy NGC253	0.7 line	18, 19	11.9
AR512	Rector, T.	NRAO-Socorro	Two radio quiet BL Lacs?		28	1.5
AS711	Saito, M. Kawabe, R. Beltran, M.T.	CfA NAO Arcetri	Continuum observations of low-mass protostars in Taurus	3.6	3	8.5
AS735	Sridharan, T.K. Zhang, Q. Wyrowski, F. Hunter, T. Beuther, H. Schilke, P.	CfA CfA MPIfR CfA MPIfR MPIfR	Resolving disks around two high-mass (proto) stars	1.3 line	24	3.0
AS742	Sjouwerman, L. Pihlstrom, Y. Dwarakanath, K.S.	NRAO-Socorro NRAO-Socorro NRAO-Socorro	Ammonia in M-0.13-0.08	1.3 line	17	8.0
AS746	Severgini, P. Caccianiga, A. Della Ceca, R. Maccaro, T. Wolter, A. Barcons, X.	INAF-OAB INAF-OAB INAF-OAB INAF-OAB INAF-OAB IFCA	XMMU J0338-3526, an apparently passive galaxy with X-ray emission	6, 20	28	3.0
AS747	Sridharan, T.K. Zhang, Q. Wyrowski, F. Hunter, T. Beuther, H. Schilke, P.	CfA CfA MPIfR CfA MPIfR MPIfR	Ammonia disks around high mass young stars	1.3	16	7.5
AS751	Shirley, Y.L. Wootten, A.	NRAO-Socorro NRAO-CV	Ammonia thermometry of low mass star forming cores	1.3 line	21	6.0
AT282	Testi, L. Natta, A. Wilner, D. Shepherd, D.	Arcetri Arcetri CfA NRAO-AOC	Herbig Ae stars	0.7, 3.6	3	5.5
AT285	Thornley, M. Kennicutt, R. Kewley, L. Regan, M. Walter, F.	Bucknell Arizona CfA STScI Caltech	HI in galaxies in the SIRTIF Nearby Galaxies Survey	20 line	7, 25, 27, 30, 31	18.4
AT286	Thornley, M. Kennicutt, R. Kewley, L. Helou, G.	Bucknell Arizona CfA IPAC	Radio-FIR relation on kpc scales in SIRTIF Nearby Galaxy Survey	20	31	3.0
AT289	Tinti, S. Caccianiga, A. Wolter, A. Celotti, A.	SISSA Brera Brera SISSA	Flat spectrum radio quasars from the REX survey	6, 20	26	2.0
AW576	Winn, J. Biggs, A. Fassnacht, C. Koopmans, L. Lovell, J. Rusin, D.	CfA Jodrell Bank STScI Caltech ATNF CfA	Time delays in gravitational lenses	3.6	5	1.0
AW579	Weiler, K. Panagia, N. Sramek, R.A. Stockdale, C. Van Dyk, S.	NRL STScI NRAO-Socorro NRL Caltech	Properties of Radio Supernovae	1.3, 2, 3.5, 6, 20, 90	9	1.0
AW593	Weiler, K.W. Stockdale, C. Sramek, R.A. Van Dyk, S.D. Panagia, N. Marcaide, J.M. Lewin, W.H.G. Pooley, D. Inmler, S.	NRL NRL NRAO-Socorro IPAC STScI Valencia MIT MIT Massachusetts	ToO observations of Supernovae	1.3, 2, 3.6, 6, 20, 90	4, 18, 27, 31	4.5
AY133	Young, L.M. Skillman, E.D.	NMIMT Minnesota	Phoenix: a dwarf spheroidal galaxy with an adjacent HI cloud	20 line	24, 25, 27	12.0
AY136	Yusef-Zadeh, F. Law, C. Cotton, W.	Northwestern Northwestern NRAO-CV	327 MHz mapping near l,b=-1d,-0.5d	90	20	4.0

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Progm	Observer	Affiliation	Program Title	Bands cm	Observing Date	Sched Hours
AY137	Yusef-Zadeh, F. Cotton, W. Law, C.	Northwestern NRAO-CV Northwestern	GBT+VLA mosaic image of the galactic center region at 20 cm	20 line	30	8.0
AZ136	Zhao, J.-H. Herrnstein, R. Goss, M. Bower, G.	CfA CfA NRAO-Socorro Calif.-Berkeley	VLA monitoring the 106-day cycle of Sgr A	0.7, 1.3, 2	4	2.0
AZ143	Zhao, J.-H. Herrnstein, R. Goss, M. Bower, G. Pegg, J.	CfA CfA NRAO-Socorro Calif.-Berkeley Harvard University	Monitoring quasi-periodic oscillations of SgrA*	0.7, 1.3, 2	13	2.0
BG129	Greenhill, L.J. Chandler, C.J. Reid, M.J. Moran, J.M. Diamond, P.J.	CfA NRAO-Socorro CfA CfA Jodrell Bank	SiO proper motions in Orion KL	0.7 Single antenna VLBI w/AK509, Test	9	5.8
BG132	Greenhill, L.J. Kondratko, P. Moran, J. Lovell, J. Jauncey, D. Kuiper, T.	CfA Harvard CfA ATNF ATNF JPL	Follow-up imaging of Southern H2O masers detected with the DSN	1.3 Phased array VLBI	15	7.6
BH104	Homan, D.C.	NRAO-CV	The 180d misaligned jet in PKS 1510-089	20 Single antenna VLBI w/AB1039, AH806, AR508	9	9.0
BN020	Nakai, N. Yamauchi, A. Sato, N. Diamond, P.	NAO NAO NAO Jodrell Bank	Water vapor megamaser in the LINER IC 1481	1.3 Phased array VLBI	5	10.0
BR088	Ratner, M.I. Bartel, N. Bietenholz, M.F. Lebach, D.E. Lestrade, J-F. Ransom, R.R. Shapiro, I.I.	CfA York U. York U. CfA Meudon York U. CfA	Astrometry of HR 8703 in 2003 for gravity probe-B mission	3.6 Phased array VLBI	26	12.0
GB045	Bartel, N. Bietenholz, M.F. Rupen, M.	York U. York U. NRAO-Socorro	SN 1986J - evolution of its shell and search for a pulsar nebula	2, 6, 20	7	2.0
	Staff	NRAO	Baselines, Pointing, Delays Maintenance Move/Operations New Years shutdown Software General tests		1	54.5 54.5 20.8 16.0 22.5 48.2

The average downtime was 2.7%.

The array was scheduled for 97.8% (730.0 hours)  
531.8 hours (71.3% of time) for astronomical programs  
121.2 hours (16.2% of time) for tests/calibration  
77.0 hours (10.3% of time) for maintenance  
Total 730.0 hours (97.8%) scheduled.

Array was in the C configuration from January 1 through January 6  
Array was in the DnC configuration from January 6 through January 31

The following independent proposals shared simultaneous observing time  
(14.9 hours total simultaneous observing):

Projects	Hours
AB1039/BH105	6.0
AR806/BH104	2.5
AK509/BG129	1.0
AR508/BH104	0.6
Test/BG129	4.8